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ABSTRACT

An overview is presented of a 3-year project focused on the development and demonstration of an interactive teaching improvement model that was research-based and used electronic technology. Though the primary goal was to improve the preparation of preservice teachers in elementary and secondary education, it was hoped the materials could be used with practicing teachers. Emphasis was placed on developing sensitivity to several fundamental teaching behaviors, first by describing them in research-based monographs, and then by showing them in interactive videotapes. An interactive computer-video teaching assessment program was developed which featured modules providing an encapsulated view of teaching. The modules provided meaningful laboratory work to augment and build upon the material covered in the lecture portion of the teacher education course. The objective was to build the skill of observation and assessment of teaching behavior. This report describes how the program was developed and implemented and its major outcomes. A practice profile is included as well as a Program Assessment Report, which summarizes the major questions addressed through the project, major features of the program, the target groups, and methods and instruments used in data-gathering. Appendices provide more detailed information on key features of the project. (JD)

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ED306198

TEACHER EDUCATION DEVELOPMENT-DEMONSTRATION (TEDD)
PROJECT REPORT

NIE Project No. 400-85-1050

PROGRAM ASSESSMENT REPORT

September 1988

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INTRODUCTION

The purpose of the Program Assessment Report is to concisely document project design and activities in a research report format. Therefore, the following sections summarize the major questions addressed through the project, major features of the program, the target groups, and methods and instruments used in data-gathering.

SECTION I. MAJOR QUESTIONS

Both key project outcomes and integral implementation questions served as underpinnings for this project. Major issues addressed in each area are discussed below.

A. PROJECT OUTCOMES focus on program impact and effectiveness.

As stated in earlier reports, and in the initial proposal for the development of the interactive video modules and other instructional materials, the major outcome was designed to be the sensitization of students to a variety of teaching behaviors. In addition, the project may impact in other areas, on other constituencies. University staff, public school teachers, student teachers, practicing teachers, and school administrators may be affected by the introduction of these materials into their particular areas of educational practice. Major outcome questions related to this project are listed below.

1. What impact did the interactive video materials have on pre-service teachers' knowledge of effective teaching practices?

   Evidence from a pre/post cognitive test of 40-items indicates a gain of 8.44 points in an 8-week period during the Fall 1987 field test. In addition, the writing ability of students indicates a gain in the use of technical terminology and sensitivity toward examples of effective and ineffective classroom teaching behaviors.

2. How did the use of the materials affect students' self-perceptions of the importance of the teaching behaviors, and perceptions of their expertise?

   The impact of the interactive video modules and related materials on pre-service teachers has been measured with a pre/post attitudinal instrument developed expressly for this project, with questions asked in two areas; the IMPORTANCE of certain characteristics, and the student's EXPERTISE in certain aspects of the knowledge base. Results indicate an above average judgment of the importance of the selected characteristics, but an average skill in assessing the behaviors at the outset. The post measure indicates a slight gain in judgment of the importance, with a larger gain in perceived skill in assessing the behaviors.

3. What impact did the materials have on students' ability to carry out reflective thinking?

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The writing completed by students after viewing a videotaped classroom teaching episode provides evidence of their ability to carry out reflective analysis of a teaching situation. That analysis coupled with student knowledge from the research on teaching effectiveness has illustrated students' ability to analyze teaching, reflect on the significance of teaching behaviors, and then make pertinent critical comment.

4. What is the impact of the interactive video modules on faculty members in the College of Education?

   Those faculty members who have used the modules have particularly liked the nature of the videotaped classroom teaching. In contrast to usual problems encountered in obtaining taped teaching segments, the project videotapes effectively present teachers and students in a natural environment exhibiting natural behaviors, even as they illustrate important principles of teaching and learning.

   University professors who incorporated the modules into their classes also expressed positive opinions about the self-instructional aspects of the modules. Students can use the materials over a wide period of time, and respond to questions and other queries that are incorporated into the lessons. Students also can assess teaching and then get immediate comment from the classroom teacher, who is featured in a videotaped interview with comments on the teaching just viewed.

5. Do students consider teaching behaviors to be universal and do they feel that it is valuable to view teaching behaviors that are outside of their subject area and grade level?

   Early evidence gathered during the first year of the project (1985-86) indicated that students preparing to teach at the elementary level would prefer to view elementary teachers. Students preparing to teach at the secondary level, since that is a more subject-specific activity, preferred to see teachers at that level, and also in a content area comparable to what the student was preparing to teach. There was less acceptance of the teaching behaviors as universal or generic, independent of subject area and grade level, than was anticipated at the outset.

6. How successful has the collaborative effort been with public schools?

   It was a pleasure to learn that public school teachers and administrators have eagerly become involved in supporting the entire project. Free and open access to classrooms and to staff in the schools has been provided. Attendance at planning meetings has been excellent. The willingness to provide local resources and to become involved in all phases of the project has truly been outstanding and very supportive.

B. PROJECT IMPLEMENTATION questions address specific program aspects which are detailed below.

7. How are the interactive materials incorporated into appropriate courses for pre-service teachers?

   It has been necessary to fully involve faculty members who anticipate using the materials since it is vital that professors view the materials and become familiar with the content. The instructional system of which the materials are a part is somewhat different from traditional classroom teaching. Time and experience are needed by faculty members who are learning how to incorporate these new applications of technology into their programs.

In courses that are composed of multiple sections, the lead teacher is a crucial contact, serving to expedite the infusion of the materials into all sections of the course, and to help in staff development activities needed to train the other instructors. These developmental activities leading to the infusion of materials into a course need to be planned systematically so that the adoption/diffusion process can take place in an orderly fashion.

8. How did students adapt to the new instructional process?

   It has been both necessary and beneficial to conduct orientation sessions with students and to provide them with instruction sheets or demonstrations of the equipment, the interactive lessons, and the process for reporting their results. As students acquired experience with computers from other courses the task of working with computer-based instructional materials seemed less formidable. Generally, students liked this new approach, though their comments about production quality and length of the lessons influenced (a) restructuring the lessons to make them shorter, and (b) improving the quality of the picture and sound.

9. What are effective and efficient techniques and procedures for ongoing development and revision of these high-technology materials, including production and field-testing aspects?

   The creating of videotapes, editing, development and recording of the materials, design of the supporting computer program, formative evaluation, and field-testing are activities that are on-going in a developmental project of this sort. Results of early uses in this project have led to modifications that then require further use, testing, and more modification. The project materials now are in a very different form from what they were in the early stages. It has become a concern to be able to balance the on-going production along with the need to continue to expand the field-testing to a variety of users.

SECTION II. PROGRAM/COMPONENT DESCRIPTION

The educational level of students served by the project is primarily that of pre-service teachers taking upper division courses in elementary teaching methods. The number of participants involved in the two major field tests (Fall 1987 and Spring 1988) was 160 each semester. Each group consisted of four sections of 40 students each, though not all students took all of the modules. In Fall 1987, 40 students used each of four module pairs (a module pair consists of an instructional module and an assessment module). In Spring 1988, all four sections of 40 students each (160 total) used four module pairs. These module pairs (COMMUNICATION, SETTING/RESOURCES, INVOLVEMENT, and MOTIVATION) were included in the target course because the topics were similar to those already planned for the course, and could be used with a minimum of change in the course content. Thus the interactive video materials did not stand alone but were incorporated into the overall plan for the course, serving as an alternative instructional system to what had normally been used. (The normal method for delivering the content included text material, lectures, and class discussion).

The goal of using the interactive materials was to heighten student sensitivity to selected teaching behaviors by illustrating the behaviors as shown in videotaped examples taken from unrehearsed classroom teaching. After the instruction, via the interactive instructional module, students were asked to assess the effectiveness or ineffectiveness of the selected behavior by viewing a second module--an assessment module--then rating the teaching and providing a written rationale to support that rating.

SECTION III. THE SAMPLE SERVED THROUGH THE PROJECT

Over the three years of the project a variety of students have been served as shown below:

PRE-SERVICE

	Elementary	Secondary	Student Teachers
Fall 1985	33	38	
Spring 1986	30	63	2
Fall 1986		90	
Spring 1987	160		10
Fall 1987	40		
Spring 1988	40		

Subjects in the on-campus field tests included undergraduate students in preservice teacher education. The average age range was 20-22 years, with approximately 5% between 25-40 years old.

The majority of the students were from smaller Iowa communities (500-5,000 population) and nearly all of the students were classified as sophomores or juniors.

Student teachers in the public schools also served as subjects in a limited field test of the materials. Twelve students were involved in this activity, which was carried out during Spring 1986 and Spring 1987.

SECTION IV. METHODOLOGY

Major questions in Section I. B (Project Implementation) address specific activities and methods which were utilized in implementing project materials, rather than project outcomes which are more readily measured. Therefore, the chart below lists data-gathering information relative to each of those major questions discussed in Section I. A which were more amenable to instrumentation and data collection. These are described more completely in Section V. The instruments are included in Appendices A through I.

A. PROJECT OUTCOMES

1. What impact did the interactive video materials have on pre-service teachers' knowledge of effective teaching practices?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Multiple choice test scores	Elementary Education Students	40-item Cognitive Test	Fall 1987

2. How did the use of the materials affect students' self-perceptions of the importance of the teaching behaviors, and perceptions of their expertise?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Responses to Likert scaled items (1-5)	Elementary and Secondary Students	22 items 14 items 14 items 25 items	Fall 1985 Spring 1986 Fall '86, Spring '87 Fall '87, Spring '88

3. What impact did the materials have on students' ability to carry out reflective thinking?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Writing samples Sample group discussion notes	Elementary and Secondary students	Free response forms	Fall 1985 Spring 1987 Fall '87, Spring '88

4. What is the impact of the interactive video modules on faculty members in the College of Education?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Letters, memos, notes from conversations	Faculty members at Iowa State	Free response	Spring 1988 Summer 1988

5. How universal or generic do students consider teaching behaviors to be?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Responses to Likert scaled items Free responses	Elementary and Secondary Students	22 items 14 items 14 items	Fall 1985 Spring 1986 Fall '86, Spring 87

6. How successful has been the collaborative effort with public schools?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Letters, memos, notes from discussions	Advisory team members	Free response	Spring 1988 Summer 1988

7. How are the interactive materials incorporated into appropriate courses of preservice teachers?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Memos, notes from discussions	ISU faculty members	Free response	From Fall 1985 to Summer 1988

8. How did students adapt to the new instructional process?

DATA GATHERED	FROM WHOM	INSTRUMENT	DATE
Likert scaled items and free response	Elementary and Secondary students	Scaled items Free response	From Fall 1985 to Summer 1988

SECTION V. INSTRUMENTATION

Since the project began, a number of instruments have been used to provide information about student attitudes toward (a) the instructional materials, and (b) the concept of assessing teaching from a background of research-based knowledge.

In addition to these attitudinal measures, several cognitive instruments were used. These included a 40-item multiple choice test which assessed competency over the knowledge base used to assess the teaching, and a free response essay composed after viewing the teaching examples.

The instruments are included in this report (Appendices A through I) with descriptive information on each summarized below.

A. ATTITUDE SCALE (Fall 1985) containing 25 items (21 scaled, 4 constructed responses).

These items attempted to assess student like/dislike of certain aspects of the interactive video materials, the length of time required to study the materials, and the connection between the use of the materials and the overall activities in the teacher education program. One of the difficulties discovered with this instrument was in the wording of the questions; they were written as positive or negative ("It was important to me to obtain the printout...." or "Using media equipment should be the job of the media specialist, not the teacher.") It was felt that these biases should be eliminated in subsequent instruments, so that a suggested correct or incorrect response was not present in the item.

B. FREE RESPONSE WRITING FROM STUDENTS in the format of short paragraphs evaluated according to 11 criteria.

These written assignments were required of students toward the end of the unit in which the interactive video modules were used. They were graded by the instructor, and were used by the developers of the materials to determine the degree to which students could view videotaped teaching episodes and make critical comments about the characteristics of the teaching. Elements of the writing sample were to include (a) a definition of the criterion to be judged, (b) an example of the criterion from the students' own experience, and (c) an example of the criterion from the videotape.

C. REVISED ATTITUDE SCALE (Spring 1986) containing 12 scaled items and 4 open-ended items.

Based on prior instruments which measured attitude, the revised instrument contained a reduced number of items but retained four open-ended questions. It was felt that the reduction of scaled items, from 21 to 12, retained the crucial items and removed the overlap and redundancy created by using a larger number of items.

D. REVISED ATTITUDE SCALE (Fall 1986) containing 10 scaled items and 4 open-ended items.

This scale was essentially the same as the version used during the previous semester, with only minor changes. It was felt that, at this point, the attitude scale had reached a level of development that permitted it to be used in its present form for several semesters in order to begin a comparison of results from one semester to the next.

E. INSTRUCTIONS FOR DISCUSSION OF TEACHING MODULES (Fall 1986) comprised of 5 discussion questions.

It was of interest to find out what students might discuss in small groups, after viewing several modules as assigned for outside class work. The series of discussion questions used in this exercise resulted in changes and modifications in the format of the modules, particularly in the improvement of the production quality of the video and computer segments. Notes were taken during the discussions and these were then combined, summarized, and analyzed in order to synthesize the general conclusions.

F. REVISED ATTITUDE SCALE, CON'T (Continued use of the Fall 1986 version....Spring 1987)

The version used during this semester resembled previous versions, so that results could be gathered from the same instrument from one semester to the next with the expectation of comparison across time.

G. TEACHER BEHAVIOR ATTITUDE SURVEY (Fall 1987) consisting of 25 scaled items, 13 to rate importance of selected characteristics, and 12 items required rating of skill.

This instrument represented a significant departure from previous instruments in that the items were worded in a neutral manner. Thirteen items required students to rate the importance, and twelve items that required the rating of skill.

H. COGNITIVE ASSESSMENT OF KNOWLEDGE BASE (Fall 1987) consisting of 40 multiple choice questions.

Four modules were used in an elementary education methods course during the fall semester 1987, and the knowledge base undergirding these modules contained a number of examples, technical terms, and new concepts. A 40-item multiple choice test was developed in order to assess students' understanding of the information. Information on the reliability and other characteristics is included in Appendix D.

I. WRITING SAMPLES THAT DESCRIBE BEHAVIORS CONTAINED IN A 15-MINUTE VIDEOTAPED TEACHING EPISODE (Fall 1987).

As an added dimension of measurement of student understanding of teaching behaviors, writing samples were obtained during the fall of 1987. These were analyzed using the technique of content analysis.

SECTION VI. RESULTS/FINDINGS

The findings presented here are divided into the following categories based on the types of research questions described in Section I of this report. Some findings resulted from early work and these, in turn, led to the modification of subsequent materials. Information on early findings and modifications resultant has been included in prior progress reports, and selected tables and charts are included as representative of the final information.

Several categories have been selected and outlined below with brief comments of the findings and issues related to what has been learned in the three years of project activities.

A. ATTITUDINAL DIMENSIONS. The variety of attitudinal instruments have yielded the following information:

- Students appreciate the individualized nature of the materials presented via interactive video techniques.
- There is some computer anxiety and fear of equipment due to lack of familiarity with electronic technology.
- A strong feeling persists that examples to be viewed should be in a student's subject area and at that grade level.
- A research base to establish a solid foundation for assessing teaching behavior is thought to be helpful.
- Direct support from the classroom teacher is important for interpreting the results of each student's assessment of the teaching behaviors.

B. COGNITIVE DIMENSIONS. These have been gleaned from data recorded automatically from the Student Data Disks used in conjunction with earlier versions of the interactive video modules, from early writing samples in Fall 1985, and from the content analysis done in the 1987-1988 field tests. In addition, the primary cognitive instrument used – the 40-item multiple-choice test developed in Fall 1987, has measured how much students know about the terms and concepts used to describe the teaching behaviors.

Results from the analysis of student data disks do not show a great deal of variation, but the analysis of writing samples and the cognitive test, both of which were used in a pre/post setting in Fall 1987, show the following:

- WRITING SAMPLES ANALYZED WITH CONTENT ANALYSIS

Pre-test (N= 40)	x = 18.00	
Post-test (N= 40)	x = 26.44	Gain of 8.44

- COGNITIVE TEST (40 ITEMS, MULTIPLE CHOICE)

Pre-test (N= 40)	x = 30.34	
Post-test (N= 40)	x = 49.45	Gain of 19.11

C. ABILITY TO ASSESS CLASSROOM TEACHING BEHAVIORS. This characteristic admittedly is cognitive, although student descriptions often contain affective dimensions, including comment on what was judged to be effective or ineffective behavior on the part of the teacher. Generally, students felt able and competent to assess the behaviors.

D. ABILITY TO DESCRIBE CLASSROOM TEACHING BEHAVIORS. This characteristic was assessed by scoring the writing samples that students produced after watching videotaped episodes of classroom teaching. Scores showed a gain, and the professor in charge of the elementary education course expressed enthusiasm over the students' abilities to describe the behaviors.

SECTION VII. DISCUSSION OF RESULTS

This section contains a discussion of the findings presented in the section above with comment on those results that seemed to be found as expected and those results that were different.

- *Lack of desire to see teaching outside the subject and grade level.* This finding was surprising because much of the literature that was examined to formulate the knowledge base upon which the materials for this project were developed indicated that teaching behaviors are often universal and in common use across a variety of grade levels and subject areas. Students were not convinced of this, however, and expressed great resistance to watching teaching episodes for the purpose of assessing teaching that did not conform to their chosen grade level and subject area. One of the reasons that elementary education students were finally selected as the target group is that they comprised a more homogeneous cluster of students with a common set of subjects and a common (K-6) teaching area. Resistance was so strong to assessing teaching of "outside" subjects and grade levels that the materials were modified to fit elementary education students. It would be hoped that similar materials could be developed for secondary teachers, but the difficulties of making the episodes and behaviors specific enough might require careful consideration in order to create successful lessons.

- *Need for more depth during interactive opportunities.* When the interruptions of the lessons occurred and student response was called for, the students indicated a desire to express a more complex opinion than one that required only a few words. Single-word responses and multiple choice questions were thought to be indicative of a superficial inquiry. One of the reasons that free responses and content analysis were chosen was to take advantage of the students' expressed need to formulate a more significant and thorough response.

- *Length of episodes.* The mechanics of "consuming" the lessons within the normal 50-minute period prompted students to emphasize the need to design lessons with this time period in mind. The videotaped episode itself was most successfully used if it was 12-15 minutes in length, with the assessment procedures and the interactive responses requiring approximately 20 minutes. Some time at the beginning was needed, of course, to check-out the materials from the equipment and check them back in. Some students felt that the

teaching episodes were too long and that they were capable of making an accurate judgment on the basis of a shorter episode, but this opinion was held by less than a third of the students.

- *Value of teacher feedback.* The final portion of each Assessment Module contained a few minutes of the classroom teacher in an interview that was designed to debrief the teaching episode for the benefit of students using the assessment module. Nearly all students enjoyed this portion and believed that it provided valuable insight into the teacher's methods, philosophy, and rationale for employing the selected teaching behaviors. In some cases, a discussion between two faculty members in the College of Education at Iowa State University was provided as a substitute for the classroom teacher's comments. Students expressed positive opinions about this technique also. Apparently a mixture of the two types of feedback is desirable, with no single method being in favor over the other.

- *Use of both negative and positive examples of teaching behaviors.* In many of the materials used by the students in the classroom, teaching episodes provide examples of the effective use of the selected teaching behaviors. The edited tapes rarely show problems in classroom management, inept teaching, or students who have learning difficulties. One reason for these prevailing conditions is related to the schools in which the videotaping was done. The schools were modern, successful, and well-organized, and served a constituency that would be considered to be middle-class. There are not a large number of examples of "problem schools" in central Iowa, or anywhere in Iowa.

  Another reason for the lack of less-than-effective teaching (so-called "negative examples") is the difficulty in obtaining the cooperation of teachers who are willing to be identified as below average, or less effective.

VII. IMPLICATIONS FOR IMPROVING TEACHER EDUCATION

The use of technology to package and deliver individualized instruction materials to students is a potential advantage that has been identified. By permitting students to study the materials at their convenience for the period of time that they feel is necessary, it is possible to provide educational advantages. In addition, and particularly with the type of subject matter used in this project, the use of a realistic medium such as color videotape is of extreme importance. It would be less than satisfactory, for example, to merely describe the teaching behaviors, either in class through lecture or from a text.

The materials have the potential to stimulate change in teacher education programs by involving classroom instructors as interpretors or discussion leaders. The nature of the individualized materials is such that they require the follow-up and follow-through that the college professor must provide. Many of the interpretive comments and differences of opinion that result when students assess teaching emerge during the classroom discussions. The materials thus serve as a springboard for discussion.

A project of this sort is an excellent vehicle for serving as a collaborative network that involved university personnel, pre-service teachers, practicing teachers, and public school officials.

The involvement of university personnel in the development of materials has a positive force in the curriculum design, particularly at the elementary level. The consultation with staff members in the design and production of materials, and the establishment of methods for using the materials has stimulated collegiality and cooperation.

In summary, the use of the interactive video materials to provide a means by which both teachers and students can study classroom teaching behaviors has proven to be positive and effective in maintaining a contemporary approach to the education of pre-service teachers. The knowledge base, woven throughout the use of the materials and undergirding the fundamental design and the approach to this complex process, is an essential part of the process.

APPENDIX A

Attitude Scale: Fall 1985

TAM PILOT STUDY

Fall 1985

INSTRUCTIONS: This evaluation has two parts. The first section has statements to be responded to on the machine scored answer sheet using the following scale:

A = Strongly Agree
B = Agree
C = Undecided
D = Disagree
E = Strongly Disagree

The last section has 5 open-ended questions. Please write your answers on this paper.

1. I read the monographs of the criteria BEFORE I did the TAMs.
2. It was important to me to obtain the printout of the jury responses.
3. I am more sensitive to strong and weak teaching behaviors as a result of using the TAM system.
4. The TAMs were not very meaningful to me because the subject area/grade level that I will be teaching was not included.
5. My experience with the TAM system has contributed to my professional development as a teacher.
6. My own classroom teaching behavior would be improved by working with more Teaching Assessment Modules.
7. Confidence in my ability to effectively teach has increased as a result of using the TAM system.
8. The length of time required to do a TAM was directly proportional to what I learned.
9. I would like to be videotaped and juried when I student teach.
10. Planning for instruction should begin with a systematic diagnosis of student needs.
11. The delivery of a lesson should be guided by a clear statement of what students are expected to learn.
12. Levels of academic achievement of students tend to confirm to the expectations of their teachers.

13. Designing and using media instruments and equipment should be the job of the media specialist, not the teacher.

14. Acquiring a substantial working knowledge of characteristics of effective teachers should be a primary goal of a teacher education program.

15. In general, methods courses of teaching a subject matter are more important than courses that focus on content of the subject matter.

16. To be a good teacher one must be a life-long learner.

17. Student outcomes should be used in measuring the effectiveness of teachers.

18. Increase in knowledge of subject matter results in decrease of lesson preparation time.

19. How confident are you that you will be a successful classroom teacher:

a. not very confident
b. somewhat confident
c. fairly confident
d. quite confident
e. completely confident

20. CHOOSE YOUR BEST ANSWER.
The most valuable facet of the Teaching Assessment Module system is:

a. the convenience of being able to view actual teaching segments without having to visit a classroom
b. receiving the jury responses concerning strong and weak teaching behaviors
c. the opportunity to practice observation and evaluation skills
d. the monographs on the criteria for making the observations
e. the hands-on experience with the microcomputer

21. If more TAMs become available before I graduate I would do:

a. no more
b. 2 or 3 more
c. half a dozen
d. 8 or 9 more
e. more than 12

We are interested in your comments on the experience of working through the Teaching Assessment Modules system. Please provide as much information as possible.

22. What did you like about the TAM system?

- it provides a basis for teacher/classroom characteristics that would be suitable.

23. What did you dislike about the TAM system?

- the fact that we had to argue with the jury's decisions before we could be done
- the teaching segment was too long

24. How could the TAM system be improved?

- let the students' opinions be independent from change their evaluation to please the jury

25. Do you think your own classroom teaching behavior would be improved by working with more interactive TAMs?

no, I have a basic idea of things to do and look out for once it become a teacher

Sec. Ed. 426 - 11/30/85

-- ASSIGNMENT TO END TAM UNIT --

Choose one of the following 3 options for completion of the TAM Assignment:

View the New Tape in class and compare/contrast this tape to:

_____ A. One of the TAM Tapes using 2 criteria.
Worth 15 Points

_____ B. Two of the TAM Tapes using 4 criteria.
Worth 25 Points

_____ C. Three of the TAM Tapes using 6 criteria.
Worth 35 Points

The following format should be utilized in the writing of each criterion:

A. Definition of the criterion in your own words.

B. Example of the criterion from your own experience.

C. Example of the criterion from the New Tape.

D. Example of the criterion from the Old Tape.

The quality of the assignment will also be based on mechanics, spelling errors, and good grammar.

Margaret Helstand
Sec. Ed 426
Sept. 30,1985
TAM assignment

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1. Setting: Average

The classroom shown on the tape appears average according to my standards. The seating, like many other classrooms, consists of rows and columns of desks. There are two tables with chairs at the side of the room. The room has three bulletin boards of different colors and a blackboard. The bulletin boards do not have titles and consist of several smaller pictures that may be hard to see from a student's chair. The classroom appears clean and uncluttered, yet dull and unstimulating. Blue venetian blinds for the window and a green plant are the most positive aspects of the classroom. The teacher does not interact with the environment except when the assignment is given. He then travels through the columns to answer individual questions.

2. Motivation: Good

The teacher is clear when giving expectations for the class. At one time during the class period, the teacher lists what the students should be able to do at the end of the lesson (these include: finding measures of angles, defining terms, and listing various kinds of angles). Another expectation is that students are to achieve 90% or higher on class quizzes. The teacher uses questions that focus attention in order to help the students find answers. (For example: "What type of angles are angles 1 and 4? We know that vertical angles are _____? Can we find 180° anywhere?") The teacher is reinforcing with positive feedback. Comments like "excellent, great, good job, okay, you bet, that's right, we're cooking with gas", provide a variety of motivators. Other comments such as "No, but you're very close" or "I think I better check what you mean", encourage re-thinking from the students. The teacher is enthusiastic about the subject matter and shows concern for the students. He provides the statistics of a previous quiz, he reviews problem areas, he evaluates the lesson, and introduces new material during the class period. Although students are free to express themselves, creative activities are not practiced.

3. Knowledge: Good

The geometry teacher is knowledgeable of his subject matter. He begins the class by giving the statistics of a quiz taken by the class. He encorporates the terms mean and median in his discussion. When a question is raised concerning the meaning of the word mean, the teacher gives a practical example of the bus ride to school in order to provide an easy to understand, individual example. He is careful to give complete and accurate definitions. He provides examples, asks questions, gives individual problems, and he writes quizzes to provide practice for learning the material. When a misunderstanding between the meanings of the words vertex and vertical occured, the teacher made sure a discussion was held and that their meanings became clear and distinguishable.

4. Involvement: Fair

The teacher seeks participation in the lesson but fails to use a variety of instructional styles. Each learning encounter (numerous problems given on the overhead projector) is quite similar. These lack variety and experimentation for the students. The teacher uses two types of interaction: teacher-student and teacher-class. There are very few examples on the tape when the students ask the teacher questions. A student-student interaction does not take place during the class period. The teacher does question the students, but the questions remain at the same cognitive level and each is worded in a very similar fashion. This class was a very teacher-centered class. It was obvious (from facial expressions and student participation) that the students were not stimulated to become involved in the teacher's lecture.

5. Explainations: Average

The teacher is clear in directions. When passing back quizzes he explains carefully to take the appropriate quiz and pass the others back. He reminds the students to respect fellow students' privacies and he has them look only at their own papers. When solving math problems, the teacher talks through the problems in small steps such as "What are we solving for? What is given? What can we prove? What generalizations can we make?" The teacher uses only two learning demonstrations: problems given on the overhead projector and a similar problem is handed out to the students. Many types of examples are not utilized by this math teacher. (I believe this creates a major learning deficiency for the students.) The teacher asks questions to reinforce the understanding of mathematical concepts but the students do not seem to be as fully involved as they might be with a different stategy.

6. Efficiency: Average

The teacher uses the advance organizing technique of discussing quiz scores to inform the students of their performances and their deficiencies concerning mathematical concepts. He moves through the subject material with an appropriate pace and gives time during the class to meet individual needs. Weaknesses in efficiency include the teacher's reliance on the overhead projector and lack of movement through the room during the lecture.

7. Communication: Average

The teacher's voice is quite low in pitch and he does not modulate it to reflect the excitement he has for the subject matter. This neutral tone is contradictory to his inner enthusiasm for the subject matter and for student growth concerning mathematics. Eye contact is used when the teacher asks a question but it should also be used when he is giving information. I noted two examples that were the results of good eye contact. First, the teacher read the smile on a knowledgeable student's face and he used a reinforcer after the correct answer was given. In another instance, the teacher questioned a student who was seemingly bored in an attempt to focus the student's attention to the subject matter. Head nods and positive reponses such as "good, great, excellent" were reinforcing to the students.

8. Sensitivity: Good

The geometry teacher on the video-tape gave individual praise to a student who had achieved a high number correct on a quiz that was returned. The teacher was also receptive to individual problems and he was sensitive to those students who had questions. He demonstrated fairness by expecting high standards yet offering help during his free periods. (Planning and resourse periods were the terms used in the tape.) The teacher was attentive and provided objectives for quizes and assignments. At the beginning of the tape (when attendence was recorded) the teacher did not intervene when the students were talking. When the lesson started the students were well behaved and classroom management was not a problem.

9. Organization: Good

The teacher is organized in his presentation of the geometry lesson. He uses an advance organizer (quiz results) to begin the class. He reviews concepts and eliminates misunderstandings by working through the material at an appropriate pace and in a sequential manner. He provides an evaluation of the presented material by handing out a problem requiring individual work. He then presents new expectations and introduces new math concepts. It is obvious that pre-planning has taken place through the problems and examples given during the class.

10. Resources: Poor

The geometry teacher chooses the overhead projector as a media aid for his presentation of the material. The projector was placed correctly in the room, but the examples used on the projector needed improving. The examples were not colorful, they were not large enough for those seated in the back to see, and they were not prepared in advance. The students attention spans were lessoned because that was the only resource he used. Blackboards, learning centers, demonstrations, models, posters, group activities, etc. would have provided a nice variety Unfortunately these were not included. One last note, where was the textbook?

11. Poise: Good

The teacher in the video-tape presented materials clearly and well-paced. He was confident and in control of his classroom. It is obvious by the students' behavior that he is viewed as a credible educator. His responses to questions and concerns were professional and he rarely hesitated when he was disrupted during the lesson.

TAMS

Some things to think about as you judge teaching...

1. **How long does it take to form an opinion?**

2. **Is there a conflict between what the research says and what you believe?**

3. **How do you feel when your opinions don't match those of the jury?**

4. **Would it help if you could talk about the teaching behavior before you punch in your assessment?**

5. **Should the +,o,- scale be defined --- to standardize the scale?**

6. **Do you notice your sensity increasing--- or are you merely trying to match with the jury?**

No name, please
GPA 3.47
Major BIOLOGY

TEACHING ASSESSMENT MODULE FIELD TEST
Spring 1988

APPENDIX C

Revised Attitude Scale: Spring 1988

Recently you worked with Teaching Assessment Modules in Sec Ed 420. W your opinions about this experience. Please respond to the questions

DISAGREE

1. I found the convenience of being able to view actual classroom teaching to be an advantage of the TAMs.
2. The idea of practicing observation and evaluation skills was a valuable aspect of the TAMs.
3. It was helpful to receive the printed response of the jury at the end of a TAM.
4. Having the computer print guidesheets from time to time was helpful.
5. The 1-page write-ups on teaching behaviors gave me a good idea of what to look for in the TAMs.
6. I feel that my experience with TAMs made a contribution to my professional development as a teacher.
7. After my work with TAMs I would characterize my attitude toward the concept as positive.
8. Class discussion after viewing a TAM is necessary to help clarify understanding of the teaching behaviors.
9. I think my own classroom teaching behavior might be improved as a result of working with TAMs.
10. I believe teaching behaviors are generic, more or less independent of the subject and grade level being taught.
11. The use of interactive computer/video technology to learn about teaching behaviors appealed to me.
12. After working with TAMs I am anxious to put into practice my own version of some of the teaching behaviors that were shown.

- What aspect of the TAMs did you like?

Using actual classroom teaching situations.

- How could TAMs be improved?

Give the behaviors to be rated one at a time with corresponding sections of tape that exhibit those behaviors. Watching the whole thing is too hard to pick out the specific behavrors

- EXPLANATIONS was one of the behaviors in a TAM you studied. What new information did you learn about this behavior?

- We are interested in any other reactions or opinions you have about the TAMs.

I think that elementary teachers use different behaviors than do secondary teachers. there are some behaviors that are generic, but not all.

APPENDIX D

Revised Attitude Scale: Fall 1986

FIELD TEST

TEACHING IMPROVEMENT MODULES

No name, please.

GPA ____

Major _____

Recently you worked with Teaching Improvement Modules in Sec.Ed. 426. We are interested in your opinions about this experience. Please respond to the questions below.

	DISAGREE	AGREE
1. I found the convenience of being able to view actual classroom teaching to be an advantage of the modules.	1 2 3 4 5	
2. The idea of practicing observation and evaluation skills was a valuable aspect of the modules.	1 2 3 4 5	
3. The one-page write-ups on teaching behaviors gave me a good idea of what to look for in the modules.	1 2 3 4 5	
4. I feel that my experience with the modules made a contribution to my professional development as a teacher.	1 2 3 4 5	
5. After my work with the modules I would characterize my attitude toward the concept as positive.	1 2 3 4 5	
6. Class discussion after viewing a module is necessary to help clarify understanding of the teaching behaviors.	1 2 3 4 5	
7. I think my own classroom teaching behavior might be improved as a result of working with the modules.	1 2 3 4 5	
8. I believe teaching behaviors are generic, more or less independent of the subject and grade level being taught.	1 2 3 4 5	
9. The use of interactive computer/video technology to learn about teaching behaviors appealed to me.	1 2 3 4 5	
10. After working with the modules I am anxious to put into practice my own version of some of the teaching behaviors that were shown.	1 2 3 4 5	

- What aspect of the modules did you like?

- How could the modules be improved?

- Communication and involvement were the behaviors you studied. What new information did you learn about these behaviors that you didn't know before?

- What other reactions or opinions do you have about the concept or the delivery system?

SecEd 426

INSTRUCTIONS FOR DISCUSSION OF TEACHING MODULES

9/24/86

APPENDIX E

Instructions for Discussions of Teaching Modules Fall 1986

We are interested in your reactions and opinions about the interactive video modules you recently completed in connection with this class. During the next period of time we will form small groups so that you may discuss the issues below.

No specific issue is assigned to any group. We would rather have each group consider any or all of the issues. It is possible that your group will become involved in one or two of the ideas and spend all of your time on those; you may not have time to consider all of the items below.

You have a piece of plastic and a felt pen. The designated chair of each group is asked to record some comments on the plastic so that each group's thoughts can be conveyed to the class as a whole. Each group chair will have a few minutes to report the results of the group discussion at the conclusion of the discussion period.

- Issues to Consider -

1. How have the modules affected your perceptions of teachers' behaviors? What did you learn about teachers' behaviors?

2. In the modules you used we videotaped examples, narrative bridges between them, some computer-based instruction, and videotaped feedback from the featured teacher. In your opinion, how should any of this be done differently; how would YOU have developed a delivery system to teach about the behaviors that teachers use?

3. What impact did the 1-page monographs (research findings on the behaviors) have on your learning about the behaviors?

4. Did the production quality (picture and sound), the mechanical glitches in the computer programs, and the variety of subject areas and grade levels have any effect on your learning about the teaching behaviors themselves?

5. How would you suggest we evaluate what you have learned about these teaching behaviors?

FIELD TEST

TEACHING IMPROVEMENT MODULES

APPENDIX F

Revised Attitude Scale, Cont.:
Spring 1987

No name, please.

GPA _____

Major _____

Recently you worked with Teaching Improvement Modules in El.Ed. 345. We are interested in your opinions about this experience. Please respond to the questions below.

	DISAGREE ... AGREE
1. I found the convenience of being able to view actual classroom teaching to be an advantage of the modules.	
2. The idea of practicing observation and evaluation skills was a valuable aspect of the modules.	
3. The write-ups on teaching behaviors gave me a good idea of what to look for in the modules.	
4. I feel that my experience with the modules made a contribution to my professional development as a teacher.	
5. After my work with the modules I would characterize my attitude toward the concept as positive.	
6. Class discussion after viewing a module is necessary to help clarify understanding of the teaching behaviors.	
7. I think my own classroom teaching behavior might be improved as a result of working with the modules.	
8. I believe teaching behaviors are generic, more or less independent of the subject and grade level being taught.	
9. The use of interactive computer/video technology to learn about teaching behaviors appealed to me.	
10. After working with the modules I am anxious to put into practice my own version of some of the teaching behaviors that were shown.	

o What aspect of the modules did you like?

o How could the modules be improved?

Teacher Behavior Attitude Survey

Fall 1987 - El Ed 245

We are interested in discovering your rating of the importance of certain skills and behaviors you have as a person preparing to teach. It is also of interest to find out what kinds of skills you believe you already possess. You can use the form below to rate both. Use the bubble answer sheet to record your responses.

Rating Scale	
1 - Unimportant	4 - Moderately important
2 - Slightly important	5 - Very important
3 - Marginally important	

How would you rate the importance of:

1 2 3 4 5

1. having a "philosophy of teaching."
2. being able to assess a particular teaching behavior.
3. observing a teacher, live, in a classroom.
4. viewing a variety of teachers.
5. discussing the use of particular teaching behaviors with peers.
6. viewing various grade levels.
7. observing a live telecast from a classroom.
8. being able to critically analyze a classroom teaching example.
9. viewing both good and poor models of teaching behaviors.
10. having knowledge of research findings about teaching behaviors.
11. viewing the teaching of a variety of subject areas.
12. observing a videotape of classroom teaching.
13. seeing a variety of classroom settings.

Rating Scale		
1 - No skill	3 - Fair skill	5 - Excellent skill
2 - Marginal skill	4 - Good skill	

How would you rate your skill in:

1 2 3 4 5

14. knowing what to look for as you observe live teaching.
15. assessing the effectiveness of a teaching behavior.
16. learning about teaching behaviors by viewing selected teaching segments from a videotape.
17. discussing strengths and weaknesses of a particular teaching example.
18. expressing your "teaching philosophy".
19. using specific descriptors and other technical terms to characterize teaching behaviors.
20. learning about teaching behaviors by discussing examples with others.
21. analyzing teaching behaviors.
22. working with others to identify, discuss, and assess examples of particular teaching strategies.
23. using research findings about teaching behaviors in order to effectively "communicate", "motivate", etc.
24. working with peers to develop effective teaching strategies.
25. learning about teaching behaviors by watching a live telecast of classroom teaching.

Cognitive Assessment

This is a 40-item multiple choice assessment to establish how much you already know about teacher behaviors. Choose one response that best answers or completes the statement. Use the bubble sheet to record your answers. Please do not mark on this test.

1. At the beginning of the year, it is best to arrange the students' desks so they face the:
   a) teacher's desk.
   b) center of the room.
   c) front of the classroom.
   d) major instructional area.

2. Teachers often display enthusiasm by:
   a) sharing personal experiences.
   b) showing subject matter expertise.
   c) expressing feelings and excitement about the subject.
   d) A and C
   e) all of the above

3. A teacher selects instructional resources with regard to all of the following except the:
   a) activity
   b) learning situation
   c) length of class period
   d) instructional objectives

4. Learning resources such as pictures, slides, transparencies, and filmstrips are classified as:
   a) print media.
   b) visual still media.
   c) community resources.
   d) visual-sound-motion materials.

5. Once teachers have developed a good motivation technique they should:
   a) use it frequently.
   b) avoid overusing it.
   c) use it to motivate slower students.
   d) only use it on rare or special occasions.

6. Research has shown that allowing students to self-select the type of media to be used in lessons:
   a) increases learning by the students.
   b) has no impact on students' learning.
   c) results in less learning by the students.
   d) increases the effectiveness of the instruction.

7. Competitive activities:
   a) motivate students to achieve success.
   b) promote a congenial group atmosphere.
   c) should be used for routine practice tasks.
   d) increase students' intrinsic motivation for learning.

8. Immediacy behaviors refer to:
   a) action responses to certain stimuli.
   b) nonlinguistic actions used to communicate.
   c) actions that directly follow verbal responses.
   d) behaviors that communicate an urgent need.

9. The four major elements of classroom motivational techniques are:
   a) enthusiasm, rewards, competition, success
   b) competition, rewards, task-value, teacher expectations
   c) feedback, rewards, competition, instrinsic motivational strategies
   d) expectations, enthusiasm, incentive strategies, intrinsic motivation strategies

10. Proxemics refers to:
   a) voice elements.
   b) body movements.
   c) use of physical contact.
   d) use of interpersonal space and distance.

11. If a child's response is only partially correct, and a more complete response is desired, the teacher should employ the technique of:
   a) probing.
   b) restating.
   c) wait-time.
   d) clarifying.

12. Two major concepts, or elements, of communication are:
   a) praise and discipline.
   b) sending and receiving.
   c) explaining and inquiring.
   d) verbal and nonverbal transmission.

13. Asking precise and unambiguous questions that are brief and appropriately phrased demonstrates the teacher's:
    a) clarity.
    b) proper sequencing.
    c) declarative statements.
    d) preplanning for questioning.

14. The best method for showing students their success is to:
    a) give them verbal praise.
    b) provide appropriate feedback.
    c) display their work to the class.
    d) reward them with special privileges.

15. Which of these is NOT included in classroom incentive strategies?
    a) competition
    b) reward systems
    c) intrinsic motivation
    d) attention to the value of the activity

16. Teachers can make best use of THEMSELVES as a resource by:
    a) being available at all times.
    b) preparing materials beforehand.
    c) moving around the room during teaching.
    d) having students write information on the chalkboard.

17. If a student responds "I don't know" to a question, the most appropriate technique for the teacher to use would be:
    a) probing.
    b) discovery.
    c) wait-time.
    d) prompting.

18. Heptics refers to:
    a) voice elements.
    b) body movements.
    c) use of physical contact.
    d) use of interpersonal space and distance.

19. Research indicates that student achievement would be enhanced by all of the following verbal skills <u>except:</u>
    a) repetition.
    b) expressions like "sort of".
    c) expressions like "now get this".
    d) prolonged silence before information.
    e) maximum speech rate of 150 words per minute.

20. Researchers suggest they are many positive consequences for students when teachers increase response wait-time. Positive results include the following except:
    a) disciplinary reprimands increase.
    b) students' failure to respond decreases.
    c) the length of student responses increase.
    d) the number of questions students ask increases.

21. Alternatives to questioning include all of the following except:
    a) redirection.
    b) imperatives.
    c) indirect questions.
    d) declarative statements.

22. Studies suggest that after posing a question, teachers should pause:
    a) 1 to 2 seconds.
    b) 1 second or less.
    c) 3 seconds or more.
    d) approximately 10 seconds.

23. Students are able to achieve at their highest level when:
    a) the teacher sets appropriate goals.
    b) students compare their work with classmates.
    c) students set goals with the help of the teacher.
    d) students are assigned tasks ensuring immediate success.

24. When using structured and directive methods and materials, higher level students seem to:
    a) dislike activities.
    b) learn about the same.
    c) learn less productively.
    d) learn more productively.

25. A teacher's nonverbal behavior is generally softer and more respectful when criticizing and correcting:
    a) preferred students.
    b) low ability students.
    c) disadvantaged students.
    d) problem behavior students.

26. Paralinguistics refers to:
    a) voice elements.
    b) body movements.
    c) use of physical contact.
    d) use of interpersonal space and distance.

27. Teachers should select classroom learning resources in regard to:
    a) the activity, learning situation, and instructional objectives.
    b) the availability of materials, ease of use, and lesson structure.
    c) their prior knowledge of the media, ease of use, and student desires.
    d) the availability of materials, their prior knowledge of the media, and the activity.

28. A major guideline for effective media use is to:
    a) prepare your own materials.
    b) have clearly defined objectives.
    c) use pre-made, low cost materials.
    d) adjust the instruction to accommodate the available resources.

29. Research suggests that after establishing longer wait-time patterns, teachers tend to modify their teaching styles in the following ways <u>except:</u>
    a) exhibiting greater flexibility.
    b) increasing student performance expectations.
    c) increasing the number and decrease the kinds of questions asked.
    d) decreasing the number and increase the variety of questions asked.

30. The teacher designing many different responses to a single question would employ what technique?
    a) probing
    b) wait-time
    c) prompting
    d) redirection

31. Kinesics refers to:
    a) voice elements.
    b) body movements.
    c) use of physical contact.
    d) use of interpersonal space and distance.

32. According to research, the physical environment of the classroom:
    a) has little effect on either attitude or achievement.
    b) affects students attitudes and achievement equally.
    c) has a greater effect on students' achievement than on their attitudes.
    d) has a greater effect on students' attitudes than on their achievement.

33. Which motivational strategy involves designing academic tasks that are inherently interesting and enjoyable?
    a) Rewards
    b) Enthusiasm
    c) Intrinsic motivation
    d) Classroom incentives

34. Intrinsic motivation refers to:
a) motivating a person prior to beginning a task.
b) specific events that motivate a particular person.
c) the value or pleasure a person associates with an activity.
d) the natural occurrence of motivation in particular activities.

35. According to research, a teacher's nonverbal behavior provides cues about all of the following except his/her:
a) feelings.
b) attitudes.
c) familiarity with the material.
d) expectations for student participation.

36. A teacher wishing to discourage student-to-student interaction would arrange sutdents' desks in which design?
a) cluster
b) modular
c) horseshoe
d) straight row

37. With regard to classroom setting; seating arrangements, traffic patterns, and activity space are considerations:
a) of utilizing floor space.
b) when planning for storage space.
c) in managing classroom resources.
d) in utilizing the entire classroom area.

38. Strongest research support exists for communication skill in:
a) eye contact.
b) teacher praise.
c) teacher gestures.
d) clarity of presentation.

39. The classroom area designated for small group instruction should be positioned:
a) in a corner of the room.
b) in the front of the room.
c) by the materials to be used.
d) so the teacher faces the room.

40. According to research, motivation:
a) initiates, directs, and maintains a behavior.
b) is a subtle and rarely used teaching technique.
c) satisfies the desire in a person to do something.
d) refers to activities or behaviors that stimulate interest.

APPENDIX I
Writing Samples that Describe Behavior Contained in a 15-minute Videotaped Teaching Episode
Fall 1987

Viewing Videotaped Instruction

An Observation Exercise

The purpose of today's activity is to assess your ability to recognize and describe specific classroom teaching behaviors.

You will view a 20-minute videotape of an elementary school teacher during an instructional lesson. The teacher behaviors you should look for are:

- Use of Setting and Instructional Resources
- Motivation
- Communication
- Involvement/Questioning

After viewing the tape you will be asked to write about each of the stated behaviors. Evaulation of your write-up will not be used for a grade but to establish the knowledge and observational skills you already possess. For each behavior, please include this suggested criteria:

- State whether or not the behavior was exhibited

- Describe the behavior so that an outsider (like those who evaluate your writing) can tell precisely what you mean by MOTIVATION,... or SETTING & RESOURCES....etc. Use technical terms if you wish; be as accurate and specific as possible.

- Illustrate your description with a specific example from the tape, or... if none was shown, in your opinion...think of an example that would illustrate your point.

After viewing the tape you will have approximately 30 minutes to write. Space has been provided for you to write on the following pages. If you need more room to write, use the backside of the page.

Communication

Involvement/Questioning

Setting & Resources

Motivation

APPENDIX J

Results of Fall 1987 Field-testing

Teacher Behavior Attitude Survey

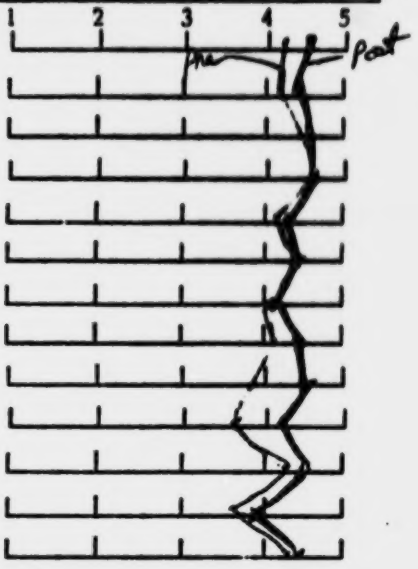
Fall 1987 - El Ed 245

We are interested in discovering your rating of the importance of certain skills and behaviors you have as a person preparing to teach. It is also of interest to find out what kinds of skills you believe you already possess. You can use the form below to rate both.
Use the bubble answer sheet to record your responses.

Rating Scale	
1 - Unimportant	4 - Moderately important
2 - Slightly important	5 - Very important
3 - Marginally important	

How would you rate the importance of:

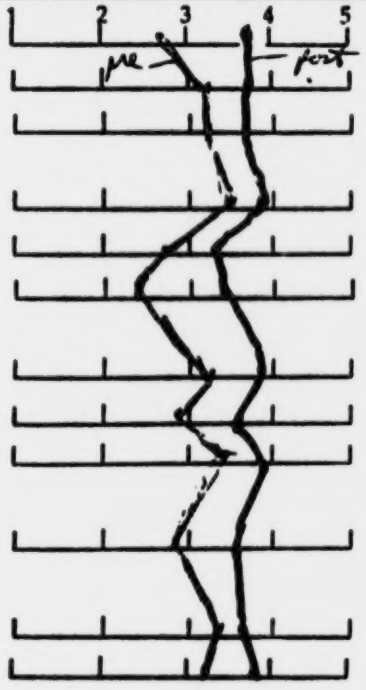
1. having a "philosophy of teaching."
2. being able to assess a particular teaching behavior.
3. observing a teacher, live, in a classroom.
4. viewing a variety of teachers.
5. discussing the use of particular teaching behaviors with peers.
6. viewing various grade levels.
7. observing a live telecast from a classroom.
8. being able to critically analyze a classroom teaching example.
9. viewing both good and poor models of teaching behaviors.
10. having knowledge of research findings about teaching behaviors.
11. viewing the teaching of a variety of subject areas.
12. observing a videotape of classroom teaching.
13. seeing a variety of classroom settings.



Rating Scale		
1 - No skill	3 - Fair skill	5 - Excellent skill
2 - Marginal skill	4 - Good skill	

How would you rate your skill in:

14. knowing what to look for as you observe live teaching.
15. assessing the effectiveness of a teaching behavior.
16. learning about teaching behaviors by viewing selected teaching segments from a videotape.
17. discussing strengths and weaknesses of a particular teaching example.
18. expressing your "teaching philosophy".
19. using specific descriptors and other technical terms to characterize teaching behaviors.
20. learning about teaching behaviors by discussing examples with others.
21. analyzing teaching behaviors.
22. working with others to identify, discuss, and assess examples of particular teaching strategies.
23. using research findings about teaching behaviors in order to effectively "communicate", "motivate", etc.
24. working with peers to develop effective teaching strategies.
25. learning about teaching behaviors by watching a live telecast of classroom teaching.



FINDINGS

Findings for the TAM / TOT research study are sketched below. Only a handful of the many possible analysis have been made, those in accordance to the Jacobi Thesis study. Statistical tests were developed and handled by Bob Crawford.

Finding #1

The question stated was searching for differences in knowledge gained by the students according to the instructional method assigned; interactive video (TAM), live telecast(TOT), or group discussion, as measured by a 40-item multiple choice test and an observation essay. A Oneway analysis of variance, including Duncan's multiple range, test analyzed the data for differences in gain scores that occurred. Tables 1 and 2. show the pre and post assessment group average score on the objective item test and the observation analysis. Statistical findings are listed below.

Table 1. Mean scores on the Objective item test

Treament Group	Pretest	Posttest	Gain
Interactive Video	18.00	26.44	8.44
Live Telecast	17.13	29.85	12.72
Group Discussion	18.41	27.73	9.32

Table 2. Mean scores on the Observation essay

Treament Group	Pretest	Posttest	Gain
Interactive Video	30.34	49.45	19.11
Live Telecast	33.93	64.07	30.14
Discussion Group	39.03	55.24	16.21

Statistical analysis of this data found a significant level of difference in gain scores according to the treatment group, when tested at the .05 level. The objective tests produced an F ratio of 4.85, which would create an F pobablity of .01. Observation essay scores obtained an F ratio 3.84, whcih would create an F probability of .0248. This means that a statistically significant differences exist between groups for gains scores as measured by both instruments . Duncan's mutiple range test located meaningful differences between the live telecasting group scores as compared to the interactive video and discussion group scores for both assessment instruments.

Finding #2

Correlational tests were also implemented to determine if a relationship could be detected between the observation essay and objective test post assessment scores. The researcher was interested in discovering if student performance on a multiple choice test is congruent to their capability to observe teaching behaviors and communicate their knowledge in an essay format. A Pearson correlation matrix between the posttest objective and

post observation essay scores reveal that no significant differences were found for any of the three treatment groups. The correlation coefficients from this test are listed in Table 3.

Table 3. Correlation coefficients for posttest instruments

Treatment Group	Coefficient	Probability
Interactive Video	.1682	.183
Live telecast	.3614	.027
Discussion group	.2024	.137

These numerical findings suggest that no significant relationship between objective posttest scores and post observation essays scores could be found. This implies that either 1) students who score well on the objective test may not be able to apply what they know to live situations, or 2) these students find difficulty in expressing their ideas through written communication. Of course, reverse hypotheses may be rendered to students who communicate well in writing, but do not score well on objective tests.

Other statistical tests and findings from this research study are currently being investigated.

Respectfully submitted,

Michael J. Jacobs

Michael J. Jacobs
Teaching Assistant
C & I Tech/ Prof. Studies

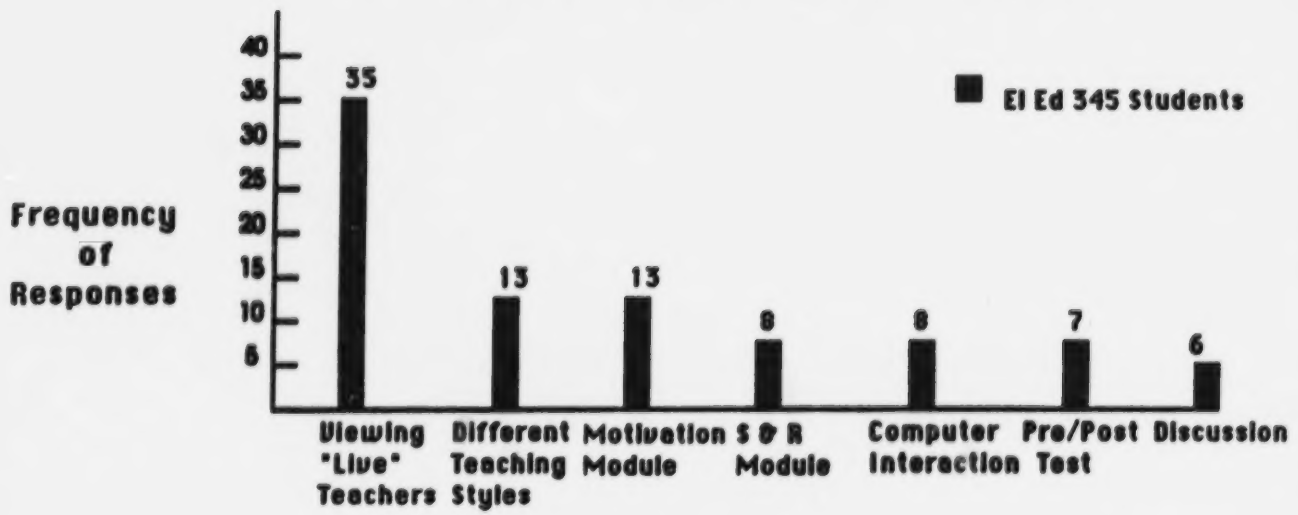
Field Test
El Ed 345 Student Evaluation of the Teaching Assessment Modules
Fall 1986 & Spring 1987

N = 150

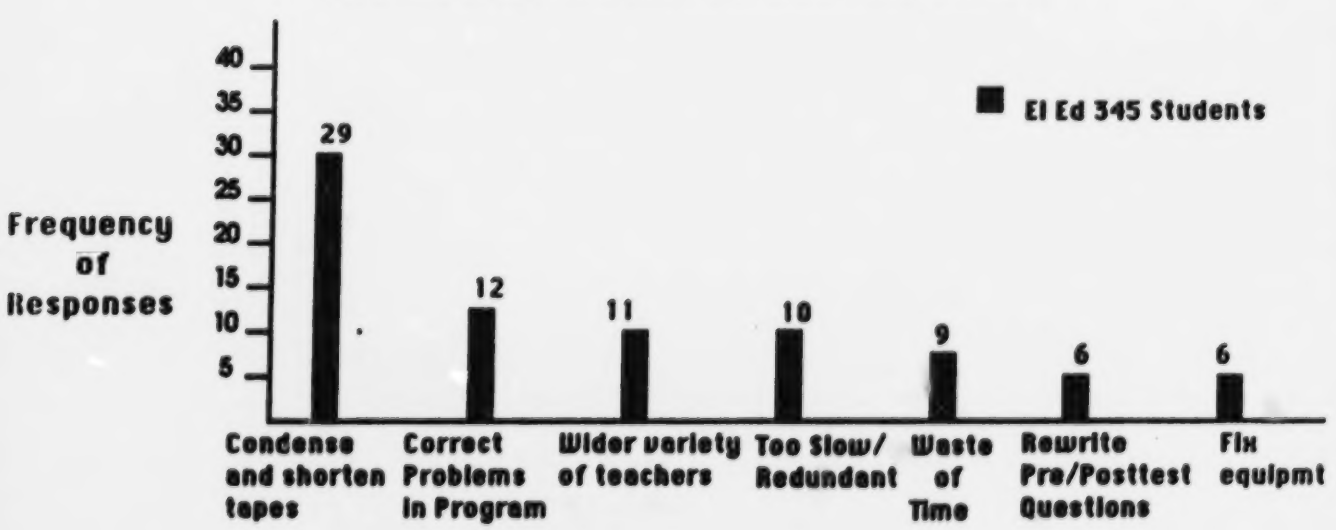
APPENDIX K

Results/Findings from Previous Reports

WHAT ASPECT OF THE MODULES DID YOU LIKE?



HOW COULD THE MODULES BE IMPROVED?



6/9/87

Field Test
Teaching Improvement Modules
Spring 1987
Elementary Education 345 Student Evaluation of the Communication, Setting & Resources, and Motivation Modules

N = 150

We are interested in your opinions about this experience. Please respond to the questions below.	Likert Scale Used to rate	Mean Rating	Variance
	DISAGREE AGREE		
1. I found the convenience of being able to view actual classroom teaching to be an advantage of the modules.	1 2 3 4 5	3.73	1.15
2. The idea of practicing observation and evaluation skills was a valuable aspect of the modules.		3.57	1.05
3. The one-page write-ups on teaching behaviors gave me a good idea of what to look for in the modules.		3.49	1.29
4. I feel that my experience with the modules made a contribution to my professional development as a teacher.		3.09	1.53
5. After my work with the modules I would characterize my attitude toward the concept as positive.		3.23	1.19
6. Class discussion after viewing a module is necessary to help clarify understanding of the teaching behaviors.		3.42	1.24
7. I think my own classroom teaching behavior might be improved as a result of working with the modules.		3.29	1.18
8. I believe teaching behaviors are generic, more or less independent of the subject and grade level being taught.		2.31	1.44
9. The use of interactive computer/video technology to learn about teaching behaviors appealed to me.		3.02	1.58
10. After woring with the modules I an anxious to put into practicing my own version of some of the teaching behaviors that were shown.		3.61	.85

- What aspect of the modules did you like?

Viewing live teachers
Different teaching situations and techniques shown
Motivation module
Setting and Resources module
Interaction with the computer
Good teachers
Pretest/Posttest
Assessment modules
Communication module
Discussion and feedback from the tapes

- How could the modules be improved ?

Condense and shorten the tapes
Correct problems with the program
Show a wider variety of teachers
Too slow moving and redundant
Waste of time
Get rid of the pretest and posttest questions
Fix the mechcanics (equipment) of the system

TEACHER EDUCATION DEVELOPMENT-DEMONSTRATION (TEDD)
PROJECT REPORT

NIE Project No. 400-85-1050

THE PRACTICE PROFILE

September 1988

The following initial draft of the practice profile is in three sections: components, requirements and demographics, and component checklist. The primary target for use of the materials is preservice elementary students in teacher education.

SECTION 1. COMPONENTS

I. Establishing collaboration between the university and schools, within the university, and within schools

- A. Identifying suitable collaborators
- B. Contacting collaborators
- C. Discussing roles and responsibilities
- D. Demonstrating the materials
- E. Describing benefits to collaborators and to target audience
- F. Specifying resources needed to support collaboration
- G. Outlining methods for assessing effectiveness of collaboration

II. Outlining the instructional process

- A. Explanation of role of research-based readings (monographs)
- B. Clarifying the nature of interactive video instruction
- C. Describing the integration of interactive video lessons into regular instruction
- D. Reviewing various forms of regular instruction (teacher-centered, teacher-student, student-student, lecture, discussion, individualized instruction, outside readings)
- E. Assessing degree of interest in becoming involved
- F. Identifying time period of use
- G. Determining characteristics of target audience
- H. Determining number of uses of materials, amount of materials needed, and number of work stations required
- I. Discussing varieties of instructional formats
- J. Defining roles of students and instructors
- K. Clarifying roles of collaborators and interaction among students, teachers, collaborators, and lead teacher or primary contact person

III. Measuring the effect on students

- A. Cognitive measures (testing, writing samples)
- B. Attitudinal measures
  1. Perceived importance of content
  2. Perceived expertise in content
  3. Opinions about the nature of the instructional delivery system, including interactive video

SECTION 2. REQUIREMENTS & DEMOGRAPHICS

I. PROJECT DEMOGRAPHICS

A. Student Characteristics

Students in elementary education as preservice teachers

B. Teacher Characteristics

Four university staff members (one Ph.D., three M.S.), three elementary teachers, two elementary principals, two high school teachers, and two district level administrators

C. School/District Characteristics

Three districts, 80 schools, and 32,122 students

1. Ames Community School District - 12 schools, 4,450 students
2. Des Moines Independent School District - 64 schools, 30,586 students
3. Jefferson Community School District - 4 schools, 1,086 students

D. Program Characteristics

Most suitable for preservice students in elementary education, but valuable for student teachers or practicing classroom teachers

II. IMPLEMENTATION REQUIREMENTS

A. Costs

Each module requires one videotape ($10) and three computer disks ($3). Eighteen modules in all. Printed material (booklets - one for each student -$1)

B. Training

Instructors should work through the materials prior to assigning them. Particular attention should be paid to reducing computer anxiety by becoming familiar with the operation of the equipment.

C. Materials/Equipment

Apple Microcomputers and videotape players with interactive videotape capability.

D. Personnel

On-site teachers to direct the use of materials; technical personnel to handle equipment set-up and to provide assistance if needed; university personnel to provide support as needed in all phases of implementation.

E. Organizational Arrangements

Planned integration into specific courses, in-service workshops, or for individual use by key personnel

SECTION III. COMPONENT CHECKLIST

I. Establishing between the university and schools, within the university and within schools. (Collaboration is the process of creating relationships, identifying roles, ascribing responsibilities, and carry out work of mutual benefit.)

	UNACCEPTABLE	ACCEPTABLE	IDEAL
A. Make initial contact	Letter of explanation and materials sent by mail	Materials sent and one or more phone conversations	Personal contact to explain roles and to repeat explanatory information
B. Demonstrate materials	Examination of materials by potential users with no interpretive assistance	Examination of materials by users accompanied by demonstration and discussion	Examination, demonstration, and discussion of materials accompanied by interpretation of materials by previous users
C. Discuss material benefits	General recognition of vague positive effects on all involved parties	Identification of specific benefits for the university and the participants	Documentation of roles of all collaborating participants, with benefits each will gain, from whom,by what date, in what way
D. Identify collaborative members	Broad reference to groups who might become involved (teachers, administrators, etc.)	Designation of specific positions, types, and numbers of collaborators	Identification of collaborators by name

II. Instructional Process (The activities connected with the organizing and administering of the instructional materials with attention to the roles of teachers and students.)

	UNACCEPTABLE	ACCEPTABLE	IDEAL
A. Establish level of responsibility for learning by the students* and for the teaching by the instructors*			
1. Research-based monographs on the nine selected teaching behaviors	Exclude the monographs from regular assignments and from discussion during instruction	Assign the monographs as background reading	Incorporate the monographs into regular classroom instruction through assignments, lectures, and class discussion.
2. Interactive video modules on the nine teaching behaviors	Use the video portions only, excluding the interactive nature of the lessons via computer	Use the interactive modules as assigned on an individual basis, to be run as assigned	Use the modules as intended, supplementing with class discussion and lecture
3. Student-student interaction during study of monographs and modules	Minimal small group discussion either in class or outside assignment	Incorporate small group discussion into regular class work	Encourage students to work through certain modules in small groups to facilitate interaction
4. Teacher-student interaction in a whole-class setting after student use of monographs and modules	Avoid discussion of the monographs and modules	Discuss modules and results of student assessment of teaching behavior	Discuss modules and student assessment of them and evaluate the student assessments in class discussion
B. Construct logistical plan			
1. Determine degree of involvement of teacher and students	Students assigned to use materials with no planned integration into class. No teacher intervention. Materials free-standing and separate from live instruction	Teacher makes minimum reference to materials through discussion and integration with other instructional activities	Thorough, complete, and systematic integration of materials into regular instruction including periodic evaluation through test and quizzes
2. Develop time schedule	Vague agreement to "...include as many materials and activities when possible..."	Agreement on approximate number and kinds of materials targested to specific weeks	Designation of number and kinds of materials, number of students, number of work stations, and specific calendar dates for use
3. Establish assessment procedures	Informal discussion and anecdotal records that reflect use of materials and impact on students	Attitude scales and free response items reflecting impact	Cognitive test with proven reliability and writing samples that can be analyzed

*"Students" and "teachers" refer to college students and university professors where the materials are used with preservice teachers or student teachers. If the materials are used with practicing teachers during inservice, they are the "students" and their "teachers" are the inservice workshop leaders.

III. Measuring the Effect on Students

	UNACCEPTABLE	ACCEPTABLE	IDEAL
A. Class discussion	Minimal class discussion or interaction outside class with no formal records of student progress	Class discussion with some evidence of student participation used for grading purposes	Small-group discussion using appointed discussion leaders and a formal instrument for reporting out
B. Cognitive testing	No objective tests or quizes over the material	One objective test with acceptable reliability and one quiz	More than one objective test and quiz with acceptable reliability and variance
C. Writing samples	No assigned writing	At least one assignment to analyze a teaching episode; 1/2 page long	Two or more written critiques each 1-page long, evaluated using the process of content analysis
D. Additudinal scales	No measure of attitude about the content of this instructional procedure	A 10-20 item instrument with 5-position Likert scales to measure perceived expertise and perceived importance of content of the instructional procedures	At least a 20-item scale as described previously plus free responses comments on strengths & weaknesses of the instructional method and the content

Iowa State University

TEACHER EDUCATION DEVELOPMENT-DEMONSTRATION (TEDD)
PROJECT REPORT

NIE Project No. 400-85-1050

PROJECT PORTRAYAL

September 1988

I. PROJECT DESCRIPTION AND EVOLUTION

Overview

This 3-year project focused on the development and demonstration of an interactive teaching improvement model that was research-based and used electronic technology. Even though the primary goal was to improve the preparation of preservice teachers in elementary and secondary education, we hoped the materials could be used with practicing teachers. Emphasis was placed on developing sensitivity to several fundamental teaching behaviors, first by describing them in research-based monographs, and then by showing them in interactive videotapes.

Background

The idea for the project began about three years before federal funding was obtained, when the college administration and a group of faculty became interested in developing some sort of "final assessment" instrument or device to provide an index of preservice teachers' ability to differentiate between effective and ineffective teaching. We presumed that an index of one's aptitude for teaching might lie in the ability to make judgments about the teaching of others. After all, with formal study of teaching methods, opportunities for microteaching, and daily observation of their own teachers, it seemed reasonable to believe that students might have accumulated certain opinions toward teaching. We merely wanted to validate that sensitivity and quantify it if possible.

A computer-based assessment system was devised so that a student could watch a videotape of a teaching episode (about 15 minutes long) and then enter ratings on Likert scales that came up on the computer screen. After each entry the computer would compare the input to a predetermined rating and inform the students how close their answers were to the "correct" answers in the computer.

Several versions of this automatic system for checking student answers were developed and used with modest success. The computerized scoring of the inputs seemed to be appealing, and a printout feature was added so that students could take away a record of their assessment. They liked that. They also liked the brief comments that were added in a subsequent version, giving reasons for the difference (or similarity) between the student rating and the computer's indication of what the rating should be.

The computer, of course, wasn't rating anything--it was using information that had been supplied by a panel of judges who had viewed the same videotape and had discussed and rated the selected teaching behaviors. Herein was discovered the first pitfall in the use of our assessment system. Somehow an "answer key" had to be created to designate each of the behaviors on an effective/ineffective scale and then the student answers had to be anticipated so that a response could be written for each contingency. Because each behavior could be rated on a 1-to-5 scale, a different type of feedback was written for each of the five possible choices

a student could make. (One of the five, of course, was "correct" and could be written as outright positive reinforcement. The other four were written in varying degrees of remediation, with those immediately on either side of the correct answer written to sound rather mild. Those further away from the correct answer conveyed a more intense tone of remediation).

Two lessons were learned as a result of these early efforts to help students interpret teaching behaviors: (1) the jury creating the "right" answers and the comments exhibited a great deal of variability, and (2) students really didn't know what to look for when they were asked to evaluate "teaching behaviors."

The panel of judges (faculty members in the College of Education) who viewed the tapes and then wrote the comments found it difficult to reach agreement on what the assessment or rating of each behavior should be. They also found it difficult to agree on the types of comments to make. Apparently everyone brought personal biases to the jury sessions and then spent time defending them. This created some heat but not much light.

The computer-based scoring of students' assessments of videotaped teaching revealed a similar weakness--lack of understanding of the fundamental characteristics of the teaching behaviors in question. It appeared as if the students were bringing to the judgment process a kind of "religion" that was based--not on cognitive knowledge--but on a set of emotional reactions or beliefs about teaching. This seemed to arise naturally from the years' of exposure to education and a personal like or dislike for certain types of teaching, teaching styles, teachers, and even the subject area being taught. (Effective teaching may be masked by a student's distaste for the subject). It was obvious that their understanding and interpretation of teaching behaviors, based on an objective, solid foundation was not strong. We felt that judgments of this sort needed to stem from an understanding of the research on teaching.

These troublesome weaknesses led to two modifications of the system. One change involved coupling the computer to a videotape player and creating tutorial videotaped instruction in an effort to give students a more solid basis on which to make their assessments by teaching them what to look for. But the more fundamental concern was focused on the nature of what students really knew in the first place about effective teaching behaviors. Was it a belief system, based on personal opinion? Or was it solid cognitive knowledge grounded in a research base? We concluded that both students and the "panel of experts" were making their judgments from their personal likes or preferences and not from what the literature tells us. For example, Wlodkowski (1984) and Covington (1984) state that competition in the classroom may produce anxiety. Gold stars for good spellers only discourage those who are less able. Yet our students relied on their own biases on this issue. The good students didn't mind competition; the poor ones did, particularly if the results were public knowledge.

It was at this point that we developed a proposal for "An Interactive Computer-Video Teaching Assessment Program" which became this project.

A considerable amount of work had already been done at the time the project started. The "lessons", which we began calling *teaching assessment modules*, consisted of interactive videotapes accompanied by two or three page descriptions of selected teaching behaviors. Some videotaped examples of teaching were on hand and being used in the modules, and we had begun to increase our search of the literature on the research of teaching in order to provide a knowledge base for students.

In 1985 the most commonly available approach to interactive video was by means of videotape, as compared to the more widely-used videodisk systems that are prevalent today. Some sample versions of interactive videotape modules, produced in connection with a graduate course on instructional design, caught the attention of the Dean and other

administrators in the college, resulting in the development of a proposal to the National Institute of Education.

Because some of the materials we planned to use had already been produced (tapes and research-based "monographs"), we did not anticipate having to carry out a great deal of production in the three-year project. Rather, our intent was to emphasize implementation and field testing. The six project objectives were to:

1. Develop a prototype interactive version of both the TAMs process and the individual TAMs.

2. Pilot test the prototype version with teacher education students and revise and refine as needed.

3. Field test the TAMs system with teacher education students as an individualized learning activity, as a small group learning/discussion activity, and as a classroom activity.

4. Field test the TAMs system with cooperating teachers at local schools in student teaching situations.

5. Field test the TAMs system with new (first, second, and third year teachers) and experienced teachers at local schools in individualized inservice activities.

6. Develop advanced version of TAMs system, including both the assessment process and the content of the individual TAMs.

It might appear as if each of these six objectives could be handled on an equal basis, and that was our intent at the outset. However, we soon discovered in the first year that the materials we had been developing prior to the onset of the grant needed a great deal of attention before they were ready to field test with student teachers or practicing teachers.

Soon after the project was funded in 1985, we visited one of the three schools that was a part of the cooperative network from which the advisory committee would be drawn. The purpose of the visit was to present a workshop on the project, and to demonstrate one of the interactive video lessons already developed.

The demonstration seemed to go smoothly enough; approximately 25 elementary teachers were present for the one-hour session. The use of interactive video seemed appealing. But when we asked the teachers to give a rating, on a 1-to-5 scale, of the teachers on the videotape, it became apparent that they felt uncomfortable with this. It was particularly obvious that they did not appreciate their ratings being compared to some faceless jury who they had not seen, did not know, and for whom there appeared to be little credibility.

Thus we began to see that the evaluation system--the system for quantifying the "effectiveness/ineffectiveness" of teaching behaviors, was not easily accepted by practicing teachers.

Some of the difficulty was similar to that of previous experience. Our jury method led to a great deal of variance within the jury. With practicing teachers, there also was a great deal of variation in how they rated the teaching. And like our preservice students, these practicing teachers found it difficult to accept the "absolute" ratings of the jury. After all, they reasoned, it was merely their word against ours. Again, the fundamental problem of having a common cognitive basis from which to make the judgments (a solid understanding of the literature on teaching behaviors) appeared to be part of the problem.

Up to this point, we had been using a single interactive module for each lesson. We called it an *assessment module;* its sole purpose was to present a teaching episode that could be assessed. It was interactive to the extent that the ratings that students entered were then matched to a jury's ratings.

The rating system thus had two faults; (1) students had little cognitive basis to make their assessments, and (2) the credibility of the jury was at stake.

To remedy these two problems, we designed a series of companion lessons, each one matched to its assessment module. Because these new lessons provided information and examples, they were called *instructional modules* and their purpose was to work in conjunction with the monographs as a means of illustrating--on tape--what the monograph described. The instructional modules became a form of guided practice to reinforce and illustrate the behaviors described in the monographs.

This linking of a microcomputer to a videotape player made it possible to create a form of computer-assisted instruction. But instead of relying entirely on the computer to provide information, ask questions, and offer feedback, the videotape could do some of that. The narrative on tape posed some questions, which students answered. After the computer judged--and kept track of--the answer, feedback was often given by playing a pre-recorded (but somewhat generic) answer on the tape.

Thus student responses triggered feedback from the system; hence the name *interactive video*. Formerly the interaction referred to the student input of ratings and the computer responses. This new form of interactive computer-assisted instruction seemed to be more powerful in its potential to teach.

We also modified the nature of the feedback the students obtained from the lessons. Instead of relying on a jury's collective comments, we began videotaping the teachers who were featured in the teaching episodes to provide a kind of "post-game critique" of their own teaching. This subsequently proved to be a very popular feature of the modules, as students could see the featured teacher during an after-teaching interview, commenting on what were felt to be the strengths and weaknesses, or effective and ineffective behaviors. This method, while informative and well-liked by students using the modules, moved away from the concept of assessment on a numerical scale. In a subsequent version, the scale was reintroduced, with the featured teacher making a self-rating. The strength lay in the teacher reflecting on the classroom episode and then rating it; the weakness of the process was that, with only one person (the teacher) doing the rating, the validity of such a system was brought into question.

During this period of increased video production, we tried to pay more attention to the quality of the picture and sound.. Some of the earlier video footage was poor--green faces, bad sound, pictures too dark--and the field testing made it obvious that the cosmetics of the television materials would need to be improved. We began to use a wireless microphone on the teacher and a hidden floor microphone to pick up responses from the class. We used two video recording systems instead of one; one was dedicated to the teacher, the other recorded the class. During the post-production process, we intercut footage of the teacher with that of the class to provide a more realistic "window" on the teaching episode.

Field testing convinced us that students wanted to see THEIR grade level and THEIR subject area. Also, the best "home" for the modules appeared to be in an elementary education methods course. The production and field testing of the modules, then, was more sharply focused to a K-6 orientation. Some of the comments from students during this first year of field testing included: "...shorten the videos...the computer part was extremely repetitive...needs to be made less rigid and faster moving...less repetition...tapes take a long time and get

boring...explanations were a little excessive...too long to fit my schedule...have fewer 'obvious' examples and not quite so lengthy final discussion..." You can see what the general tone of these comments conveys, although we felt that students might be reacting to homework in general. One of the perplexing questions we faced was the degree to which we should accept these reactions.

Additionally, several organizational procedures were carried out during the first year. These included:

1. Setting up an advisory committee with three public school systems.

2. Arranging for increased production of classroom tapes to assess teaching behaviors.

3. Conducting a search of the literature in order to build a knowledge base to undergird assessment of teaching behaviors.

4. Field testing materials with preservice teachers.

During the first year, several favorable things occurred. A fine advisory committee of collaborators was formed--they were eager and wanted to become involved, and "...so appreciative that the university wants to work with the public schools to improve the education of teachers." In fact, we made some new tapes that first year through the cooperation of committee members. Two of the teachers from one school became the subjects for new tapes from which we assembled lessons on "Communication" and "Explanations." They interviewed each other for the post-teaching comments, preparing for that process by studying each other's tapes together. A third teacher was recruited by another committee member, and the post-teaching interview was conducted by the teacher and the committee member after studying the tape together. Apparently it was considered somewhat of an honor to be a featured teacher on tape. We later discovered that, as one member of our collaborative committee put it, "I was impressed with the number of teachers who expressed an interest in the project and were jealous of the teacher who was taped. Many felt left out!"

On campus there were helpful colleagues in the College of Education who wanted to use the materials in their methods courses. This provided us with readily available field-test sites. Several sections of a course in secondary education were selected to use four of the modules, and two sections of a course in elementary education were scheduled to use modules also.

Since students felt that the teaching episodes were more understandable when they focussed on their future teaching level, development of the modules began to focus more and more on the K-6 area in the second year. Since elementary education is more homogeneous than secondary education (K-6 methods and subjects are more closely related than those found in grades 7-12), the trend toward choosing examples and creating interactive video modules shifted to the K-6 area.

It became clear, with this shift, that more examples of classroom teaching would be needed to sustain the increased production of modules. Because one of the advisory committee members was an elementary school principal, arrangements were made to work with the entire faculty in that building to secure a large collection of tapes of classroom teaching.

The second year of the project was a busy one. During the time field tests were being conducted in elementary education methods courses on campus, new tapes were being made in the schools and new modules were being scripted, taped, and edited. The companion computer programs for them were also written. In addition, selected modules with student teachers were field tested.

The use the modules with student teachers brought to the surface a number of considerations not fully anticipated. We had realized, of course, that student teachers were very busy people, and that the shift from the university environment to that of public schools--full time--might be a form of culture shock to the student teacher. What we had not anticipated was the amount of personal attention each field test site might require. The interactive video equipment needed to be trucked to the school, installed, and debugged sufficiently. Instructions on how to operate it, where to store it when not in use, and who to call if it malfunctioned were needed--and we found out that these were best delivered in person, not in print. The cooperating teacher, the student teacher, and often the media specialist (on whose turf the gear was placed) all expected an inservice "lesson" on the concept of interactive video and the overall goals of the project. We considered this an opportunity to promote the whole enterprise--research, university/public school cooperation, innovative self-instruction, etc.--but we were unprepared for the amount of time such activities required.

Even after careful groundwork and good intentions on the part of all of us connected with the use of the modules in the public schools with student teachers, the results were not entirely satisfactory. "I was so busy making lesson plans and preparing for my work the next day that I didn't find the time to do much with the modules," said one student teacher, and "These modules more or less repeat what we learned in college anyway, so I didn't work with them very much" came from another. The problem seemed to be related to the intense activities of student teaching. With a set agenda already in place, the use of the modules was perceived as an add-on, something intruding over and above the regular, specified activities of student teaching.

In the last year of the project, we launched a major study in elementary education with four modules and several sections of the basic methods course. At this time we increased the sophistication of the scoring or assessment method, using a process called *content analysis*. Content analysis involves the analysis of the content of written work, looking beyond the grammar, syntax, and spelling to get at the significance of what is being written. During year three we required that students analyze the teaching episodes by not only rating the effectiveness on a four-position scale, but that they provide a written rationale for their choice. This process was generally accepted by the students, and was welcomed by the teachers. It became one of the dimensions of an evaluation system to determine how much students learned from their work with the interactive modules.

Several project activities were undertaken since the March 1988 progress report. A summary of these activities follows:

During the Spring 1988 semester, the basic parameters used as guidelines for the Fall 1987 field test were used. However, since the Spring 1988 use was considered to be an institutionalization of the materials, less data were gathered. (The primary data collection was conducted in Fall 1987.)

Approximately 160 students used the four modules COMMUNICATION, MOTIVATION, SETTING/RESOURCES, and INVOLVEMENT during the spring; a total of four sections of the target course, El Ed 254 - Strategies in Teaching, participated.

Unlike the fall field test, in which the four modules were used back-to-back during a period of only a few weeks, the springtime schedule incorporated the modules into a much longer period where they were interspersed with other topics. For this reason, the 40-item multiple choice test specifically designed for the four modules was not used as a single instrument. Rather, the items were split out and incorporated into the final exam for the course.

Writing samples were collected from all of the students and analyzed by using the process of content analysis in the same manner as that used for the Fall 1987 field test. Student comments were also collected from everyone in the sections as a part of the course evaluations conducted toward the end of the course.

Results during the spring use were congruent with those from the previous fall. Because the modules were used over a longer period during the semester, and the cognitive test for the four modules was not administered as a single unit, it was not possible to make a direct comparison between Fall 1987 and Spring 1988. However, because the materials and procedures were considered satisfactory from the fall test, and because those who were responsible for the course were enthusiastic with the potential use of the interactive video materials held, adoption and institutionalization of the project did occur.

Plans are being made for use of the materials during the 1988-89 academic year, with the hope that additional modules may be used in the adopter course.

Another activity of the last progress period was summarizing the comments and opinions of the primary participants in this project through their comments. Three groups provided excellent insights into how and why the project worked. Each of the groups is listed and detailed below.

1. Anecdotal records from conversations with the lead teacher and others connected with the methods course in elementary education, in which the field test was conducted during the 1987-88 academic year.

2. Formal responses from the Advisory Committee at the April 1988 meeting of the committee.

3. Comments from graduate students who have been involved in the design, development, and implementation of the modules.

1. Conversations with teachers in the methods courses.

The tone of the conversations was generally enthusiastic, and we discussed strengths and weaknesses of the modules, the overall approach to instruction using interactive video technology as well as the impact on the instructors and on the students.

STRENGTHS: The availability of the hardware so that students could use the equipment on a self-scheduling basis. That provided for flexibility, and students could work on the activity into their schedules. Individual preferences for study style was determined by the students; some worked in groups of two or three and others worked by themselves. There was not much evidence in favor of one method over the other. Working individually, students could pace the program to suit themselves. On the other hand, in small groups, they could discuss among themselves the types of responses they wished to make to the interactive questions, as well as work toward concensus on the ratings of the teaching behaviors. Students like to interact, particularly in class, and the modules seemed to stimulate that type of discussion.

The modules provided an encapsulated view of the teaching. It was very focused, with good reinforcement of concepts they had read about and talked about in class. The variation of terms was sometimes a problem, but the students need to learn to focus on concepts. The sophomore students in the course may learn to adjust to this. After all, terms vary between courses, too. They haven't had much experience transferring concepts from one situation to another.

The fact that some students had difficulty in learning from machinery was not necessarily a weakness. This probably underscores a variety in learning styles.

Mechanical glitches didn't seem to bother students in some sections, but they did in others. The strength here is that all students seemed to accommodate to the system satisfactorily.

The modules provided meaningful laboratory work to augment and build upon the material covered in the lecture portion of the course. They served to reinforce the text material by providing illustrations of the behaviors and methods studied.

Interactive modules could be used by an instructor in the lecture as a means of illustrating the important points. Some instructors don't like the idea of sending students off to do this sort of observation on their own, and feel that guided practice in observation is best accomplished in class. Some teachers like to be on hand when students make a big discovery because that is a focal point -- a little like discussing last week's football game.

WEAKNESSES: One of the biggest frustrations was in evaluating students' work after they had used the modules. It is difficult to determine just how much a student has learned when the skill in question is that of observation and assessment of teaching behavior. Measurement now is by means of an objective test in the lecture portion of the course, and that technique may not be appropriate for the laboratory work, such as the modules represented. One solution might be to collect all possible responses, make a list of them, and then have the students conduct a discussion and evaluation of the list of responses. If nothing else, they would gain insight into the difficulty of evaluating student work.

Student need to generate ideas -- to write or talk about what they do and see. Multiple choice evaluations do not serve this purpose. The nature of some of the interaction that was called for was such that it implied too much right or wrong, but real teaching is not always this clear cut. The effectiveness of teaching may not be ratable on a 1 - to - 5 scale.

Since the interactive lessons couldn't be stopped midway through there was a sense of lack of control or loss of control on the part of the students. (In a lecture, at least you can raise your hand and ask a question.)

There was some concern for verifying that all students did indeed do all of their assigned work. Perhaps the management system for using the modules could be improved to increase student accountability.

2. Formal responses from the advisory committee.

At the most recent meeting in April 1988, an eight-question instrument was used to determine the feelings of committee members toward the overall impact the project might have on teacher education, to obtain their view of the effectiveness of the administration and management of the project, to evaluate and develop a profile of their opinions on a number of other facets of the project. The committee members were given nearly 30 minutes to formulate their comments at the close of that meeting. Many stayed beyond that time limit, writing with vigor up to the very end.

We began to attempt to summarize the comments by establishing categories which would lend themselves to a frequency count of the most mentioned observations. However, as we began that process by reading all of the responses to the first question, it became clear that a far more meaningful method was to consider the committee's responses in a more holistic manner. Since some of the tone and direction of the comments is lost, along with each persons' special

way of expressing the ideas in a chart summarizing the comments, they are included in Appendix (F) of this report.

We were pleased with the reactions of the advisory committee, all of whom (except for one person) have been with the project since its beginning three years ago. They considered the experience to have been valuable for teacher education and for themselves. Many said that they considered it an honor to have been asked to serve, and they did not feel that it was a duty that encroached on their normal teaching activities. They expressed interest in seeing the efforts continue and volunteered to continue to help even though the project will close soon.

3. Reactions from graduate students.

A total of seven graduate students have worked with the project since it began, with two of those being particularly close to the activities for the past two years. Even though the comments of the those two are expressed here, the opinions of the others are similar.

"The project became a live, dynamic, on-going activity that exemplified a need to improve the quality of undergraduate education for preservice teachers. Too often the theoretical considerations that form the basis for graduate work are separated from real experiences. The activities connected with the conceptualization, development, and evaluation of the project established an important connection between theory and practice.

"A meaningful link was established between the knowledge base that research has given us and the implementation of those ideas. It was comforting to know that careful attention was being given to the fundamental principles.

"It has always been difficult for some to understand the relationship between teaching and research. We often hear remarks about researchers who can't teach, or about the reward system being slanted toward research and publication with little real regard for good teaching. The underlying assumptions about the interactive video modules seemed to tie teaching and research together. Without one, the other would not be meaningful or even possible.

"Some of the skills acquired by working on the project include the ability to produce under pressure, without many guidelines or precedents, and often with little to go on but intuition. That is the nature of a developmental project, however. If all of the rules were known beforehand, and it became a matter of merely following a recipe, the excitement and spirit of innovation would be gone. Use of the library, resource persons, peers, and colleagues became necessary to find answers to questions that probably had not been asked before.

"Sometimes the human relations skills that were needed were surprising. Making arrangements to go into a teacher's classroom, for example, and make videotape, often required a special set of skills that aren't ordinarily used. Terms such as professionalism, tact, and 'social politics' took on new meanings because they really were needed to carry out some of the plans we had.

II. MAJOR ISSUES, STRATEGIES AND COLLABORATION APPROACHES

With the six objectives (stated above) to guide the project, the following five major issues were anticipated as the central foci:

1. Establishing a collaborative network between public schools and the university to identify and carry out project activities.
2. Developing a sensitivity in preservice teachers to selected teaching behaviors.

3. Acquainting students with the research underlying teaching behaviors.

4. Enabling students to assess the effectiveness or ineffectiveness of the behaviors.

5. Extensive field testing with a variety of targets (preservice teachers, student teachers, practicing teachers).

Each of these issues is more fully explained below.

Issue 1. Establishing a collaborative network between public schools and the university to identify and carry out project activities.

The underlying strategy used to address all five issues involved the formation of a collaborative network that included three public school systems and the Iowa State University College of Education. The purpose in forming such a network was to achieve a broad base of opinion that would govern how the remaining issues would be addressed. It was necessary to decide who would do what, and to develop a system for acquiring the teaching episodes, to produce the materials, and to field test the products. We recognized from the outset that a number of approaches could be used to select the teaching behaviors to be included, and to contrive the interactive video scenarios that were to be used. The work plan was contrived by the nine-member advisory committee (three from each of three school systems) as well as the four-member steering committee in the College.

To form the collaborative network, it was necessary to make early contact with teachers and school systems, as well as with our own faculty in order to enlist their aid and advice in setting up the project. A great deal of the success of the project depended on how well we could work with the schools. We needed their advice as well as their permission to produce videotapes in their classrooms. It was an exercise in human relations to gain the confidence of the public school teachers and to give them a stake in the enterprise.

We also needed the help of university staff in field testing the materials; we contacted selected faculty members within the college to discuss their course outlines and develop ways of incorporating the interactive video lessons into their courses.

To oversee the entire project a college steering committee was formed, consisting of the Dean, Associate Dean, Director of the Research Institute for Studies in Education, and the Project Director.

Issue 2. Developing a sensitivity in preservice teachers to selected teaching behaviors.

We felt it was critical to the successful training of teachers that they be able to recognize commonly-accepted classroom teaching behaviors, such as motivation, classroom management, verbal and nonverbal communication, and others. Too often on our campus and elsewhere the method for learning about these behaviors consisted of lecture and class discussion based on textbook descriptions. It seemed more realistic to have students see teachers work with a class in a variety of ways instead of merely reading about what teachers do. Availability of inexpensive television tape recording equipment and the effectiveness of tape in showing events realistically suggested that a series of videotapes portraying teaching behaviors would be ideal.

The advisory committee and college faculty assisted in identifying the behaviors, and in providing an entre into the schools so that tapes could be made.

At first we felt that the interactive lessons could be stand-alone activities in which students worked through the "assignments," very much like readings or other out-of-class work

is assigned. It turned out that an important part of this sensitizing process involved interaction with others, through discussion with peers and with the instructor. In fact, an important issue centered on the process of reflective analysis stimulated by the lessons.

Reflective analysis is not easy to characterize, but it is related to the process of considering the rationale, underlying assumptions, and consequences of carrying out an action or exhibiting a behavior. It seemed appropriate to foster this sort of introspection in the students who were using the modules.

Issue 3. Acquainting students with the research underlying teaching behaviors.

The temptation for practitioners to conclude that results acquired from trial-and-error teaching constitute universal truths has been mentioned. This attitude was felt to prevail on the part of college instructors, students in teacher education, and practicing teachers. Somehow we had to convince the users of these materials that the assessment of effective and ineffective teaching behaviors must be based on solid research. The inclusion of findings from studies on teaching behaviors was a major element of this project, and it turned out to be an eye-opener for both teachers and students who participated. A number of personal opinions were shattered as users of the materials learned that their own ideas weren't consistent with research findings.

The process of identifying the target behaviors was complicated because so many behaviors were already described in lists numbering hundreds of items. We wanted to keep the number small so that students wouldn't be confused by the complexity of their task. The behaviors were taken from many sources and the final selection was made after collapsing similar behaviors into single categories. An initial list of 11 was selected; this list was later reduced to nine. These included:

- Setting and Resources
- Communication
- Involvement
- Efficiency
- Organization
- Motivation
- Explanations
- Knowledge
- Sensitivity

Issue 4. Enabling students to assess the effectiveness or ineffectiveness of the behaviors.

If students could develop the sensitivity to recognize selected teaching behaviors, and acquire a cognitive background from the research, the next step seemed to be that of making a judgment about the behaviors. In order to provide a degree of quantification in the process of assessing teaching behaviors, a four-position Likert scale was used. Emphasis was on assessing the behavior, not the teacher.

A computer scoring system with jury feedback, described earlier, was used initially. But the problems with inter-rater reliability on the jury seemed to be a major stumbling block. As one jury member put it, "I felt as if I was forced to compromise my opinion during the discussions in order that the jury could reach consensus." This method was replaced by one in which post-teaching comments of the featured teachers were videotaped, after they had an opportunity to study the tape of their teaching. Students like this method much better, partly because they received a rationale for why the teaching was done the way it was, and the comments had a high degree of credibility because the teacher made them.

Issue 5. Extensive field testing with a variety of targets (preservice teachers, student teachers, practicing teachers).

From the outset our intent was to spend a great deal of effort on the field testing of materials that we more or less had prepared before the project was funded. Any modifications, we presumed, would be minor and would not require much time or effort.

This assumption proved to be incorrect and caused the project to be modified in two ways. First of all, much more attention was needed to manage the production of new videotapes, new computer programs, and the modification of the modules to bring them into compliance with recommendations stemming from the field tests. Second, we underestimated the amount of effort and attention that a field test "event" would require. Each time the modules were put to use in a university classroom or with a student teacher, a great deal of attention was necessary. Equipment had to be put in place and a plan for conducting the field test had to be worked out. All of this seemed to require personal interaction with the people who participated in the field test.

The five issues described above were addressed by the following specific activities:

Activity 1. Conducting a systematic search of the literature to identify the behaviors to be emphasized.

It was of utmost importance that a rich and significant research base be used. Effective teaching research provides the basis for the content of the video lesson. These efforts have narrowed the focus to effective instructional skills and have attempted to link certain teacher behaviors to student achievement. Originally, eleven criteria were selected from lists of teacher characteristics against which to measure classroom performance and used for evaluating the teacher behaviors shown in the videotapes. Only criteria that were (easily) observable in tapes were chosen. The nine final criteria include setting and resources, motivation, knowledge, involvement, explanation, efficiency, communication, sensitivity, and organization. Each of these teacher behaviors and their accompanying subcriteria are research based and have been found to be related to student achievement.

Throughout the project, efforts were made to continually seek out and synthesize pertinent research on effective teaching and teacher evaluation in the monographs, as well as keep up-to-date on the most recent findings related to design of instructional software, electronic technology, computer learning, and learning theory.

Activity 2. Collecting videotapes of teaching behaviors.

The acquisition of videotapes was an ongoing project activity. Our primary connection to the public schools was through the means of the advisory team. It was with their cooperation that we were able to recruit classroom teachers in their schools, to make arrangements for videotaping in the classrooms, to develop strategies for initial taping, and to use the tapes of the teachers in the project.

Activity 3. Developing computer-supported interactive lessons.

With the necessary examples of classroom teaching, excerpts were selected and incorporated into scripts for the interactive lessons. The production of modules related to the selected effective teacher behaviors involved designing, scripting, taping, editing, and extensive computer programming that serves to drive the lessons and make the materials useable. Special attention was paid to the scenario or story line for each videotape so that it would become an attractive and interesting piece – pleasant to hear, to watch, and from which to learn.

During each phase of the project, significant improvement in the quality of the modules was made. Feedback from students, faculty, project staff, and the advisory teams were integral in incorporating these improvements both in terms of design and production techniques.

Activity 4. Analyzing outcomes: testing, rating tapes, discussion groups.

Since Fall 1985, 539 teacher education students (336 elementary education, 191 secondary education, and 12 student teachers) participated in this project. In the major field testing (Fall 1987 and Spring 1988), the interactive video lessons were incorporated into the overall plan for upper division courses in elementary teaching methods and thus served as an alternative instructional system to what had normally been used. Prior to that, alternative methods of incorporating the lessons into both elementary and secondary courses were explored. Thus students as well as faculty members at Iowa State University and advisory team members provided data for evaluating the project.

A number of instruments were used to provide information about student attitudes towards (a) the instructional materials, and (b) the concept of assessing teaching from a background of research-based knowledge. In addition to these attitudinal measures, several cognitive, including a 40-item multiple choice test which assessed student understanding of the knowledge base and a free response essay composed after viewing the teacher examples, were used. Comments from letters, memos, conversations, and class group discussion notes were also felt to be integral evaluation tools.

Some of the strategies were chosen because of the need to reduce the labor-intensity of teaching, and to foster the development of individual study skills. For example, students were required to view the modules on their own, either by themselves or with a partner. And they were asked to write a critical analysis of the teaching episode under consideration, pointing out the reason for their choice of rating on the 1-to-4 scale. One of the outcomes that was hoped for as a result of using the modules in this way was the *reflective analysis* of teaching behaviors. The process involves the acquisition of a knowledge base and the subsequent consideration of the information to reach a point of view. In the case of these teaching behaviors, it is an introspective, personal reflection of the factors and conditions surrounding the teaching episode, and the subsequent formation of an opinion or position relative to the behaviors being studied.

The effectiveness of those strategies was judged to be generally successful. For example, the committee members showed an eagerness to get involved with the project from the outset, and their enthusiasm continued at a high level. In a final evaluation session of the project they made comments such as, "I was impressed with the number of teachers who expressed an interest in the project." and "We would be willing to cooperate in other projects if needed. This has been a growing experience and it is good to get together with other representatives from other schools."

Furthermore, students found the interactive videotape lessons to be helpful in modeling certain teaching behaviors, making the behaviors more vivid and understandable than is possible by merely reading about them or hearing them discussed. The tapes became focal points for discussion of effective or ineffective practices in the classroom. It was possible to apply principles of cooperative learning in suggesting ways that students could use the materials. Questions posed in the interactive modules served as focal points for discussion.

The nature and extent of the collaboration may be described as far-reaching, broad, extensive, and continuous. From the very beginning, the advisory committee has played a fundamental role in the project, assisting in identifying the basic issues, suggesting means for addressing them, and assisting in the arrangements for producing videotapes in the schools. The collaboration was fruitful for both the College and the public school personnel, creating a

feeling of bonding between the two. "I gained an appreciation of the quality of instruction that is taking place right within my own building," was the comment one advisory committee member made. A sense of ownership evolved as the committee met periodically to review progress. Another committee member said, "These tapes have really been eye openers. After reviewing them I always do some soul searching into my own philosophy and my teaching style."

The collaborators have been involved in the preparation of this report by providing detailed written comments, as well as in discussion at a recent meeting, in which they reflected on their roles in the project.

III. MAJOR OUTCOMES

Of the many products, processes, and techniques resulting from our work, the following five represent the major outcomes:

1. Increased familiarity with technology, and the use of a nontraditional instructional system by preservice teachers, practicing teachers, and university faculty.

2. Heightened ability by preservice teachers to judge teaching behaviors.

3. Continued experience, both by the university and the involved public schools, in setting up a collaborative network and in using it to manage the various phases and aspects of the project.

4. Renewed stimulus to graduate students, helping them learn about the nature of research, the design of interactive video, the production of tapes of classroom teaching, and the evaluation of a project.

5. Focused effort in the revision of selected curriculum areas, particularly in elementary methods courses, in teacher education in the college.

Outcome 1. Increased familiarity with technology, and the use of a nontraditional instructional system by preservice teachers, practicing teachers, and university faculty.

These outcomes are important for the theme they exemplify; the spirit of vigor, renewal, and innovation. In the case of educational technology, for example, we have found it to be a continuing challenge to convince our students and our own faculty to try new ideas. This may be a built-in characteristic of education, a field in which the adoption schedule for new ideas and techniques is extremely slow. In addition to overcoming the inertia of tradition, there is the possibility that awareness levels of innate curiosity and imagination need to be raised. Whatever the reasons, this project served to call attention to new hardware and software, and a new teaching system. A student said "I really enjoyed using some innovative new learning systems, especially since they involve the computer, because I'll be using that in my own teaching." And a member of the staff in whose course the materials were used said,"....the modules force students to use technology. Students should be exposed to the technology and to videotaped teaching materials. We talk about modeling, and how else are they going to see teaching?"

Outcome 2. Heightened ability by preservice teachers to judge teaching behaviors.

The second outcome relates to an initial objective of the project: that of increasing the ability of preservice teachers to recognize and assess teaching behaviors. While it is difficult

to provide immutable evidence that a universal reliability is obtainable the fact remains that the research monographs and the accompanying interactive video lessons did help students become more aware of the variety of teaching styles and techniques. The class discussions and student writing samples bear this out, as well as the ratings students made of some of the affective dimensions of their experiences. The materials served another purpose too. They became springboards for discussion in the classes in which they were used. Students, after having used the materials, were better prepared and more stimulated to talk about and write about a variety of teaching behaviors.

Outcome 3. Continued experience, both by the university and the involved public schools, in setting up a collaborative network and in using it to manage the various phases and aspects of the project.

The third important outcome involved the establishing of a collaborative network with the public schools. Having a committee of nine experienced and dedicated teachers lent broad support in insuring that the project would not become skewed in one direction or the other. Representatives from small and large schools contributed to the robustness of the group. One of the committee members noted, "[The advisory committee] was good...big school, small schools, rural, urban. The [advisory committee] meetings were structured for involvement--very well done." In addition to the advisory committee, the college steering committee acted as an internal guidance system. It was particularly helpful to have the Research Institute for Studies in Education to draw upon for technical support. The Director of the Institute provided fundamental conceptual support and was the primary agent for framing the underlying research questions that were addressed in the project.

Outcome 4. Renewed stimulus to graduate students, helping them learn about the nature of research, the design of interactive video, the production of tapes of classroom teaching, and the evaluation of a project.

The fourth outcome relates to the power of a project like this to capture the imagination of graduate students. Because the development of interactive video lessons was a new activity for the College of Education, there had not been former opportunities for students to work with this type of instructional technology, beyond some projects carried out as assignments in graduate courses. Since the inception of the project, a total of seven graduate students had a hand in various stages of production, with two of them taking major responsibilities. They assisted in the videotaping of classroom teaching, in the editing and programming of the interactive lessons, and in the gathering and analysis of data during the field tests. The experience has proven valuable; one person now has a position in industry carrying out the development of computer-based training materials, and another is completing work on a dissertation involving the use of an interactive videodisk of teaching behaviors--a direct offshoot of this project.

Outcome 5. Focused effort in the revision of selected curriculum areas, particularly in elementary methods courses, in teacher education in the college.

The fifth outcome may be characterized as a renewed focus on curriculum development in the teacher education program in the college. Because of the need to field test the materials in courses for preservice teachers, the project director and the lead teacher for the involved courses worked together to insure proper infusion of interactive video lessons, research-based monographs, the evaluation techniques. In addition, support for these activities was necessary from the Dean's level on down. The project served the purpose of causing some basic questions to be raised about our teacher education program. What is the appropriate role of instructional technology in our program? How does the nature of the students' experiences parallel recommendations from current national studies? How realistic are the examples of classroom teaching that are used in the courses dealing with methods of teaching? What should be the nature and extent of evaluation of our preservice teacher education students in the areas of research on teaching, knowledge of teaching techniques, and ability to assess effective and ineffective teaching? A strong sense of collegiality developed because of the joint planning that was conducted.

The outcomes described above are of fundamental importance within the college and teacher education, and between the university and the public schools for the following reasons:

Instructional technology will continue to be a force in education, but there is a characteristic lag between the development of the hardware/software systems and the sheer human ability to absorb the impact. Long and personal traditions seem to militate against mucreplacement of the live teacher with machines or other automatic systems for delivering instruction. The more we can experiment with instructional technology, the more we can discover about its strengths and weaknesses. For preservice teachers, it is especially important to use technology in the modeling process so that they will accept it as a legitimate avenue of teaching and learning when they become teachers.

Concern in the past few years about the quality of teacher preparation programs highlights the need to provide more realistic means for preparing teachers by providing longer student teaching and a wider variety of field experiences. Videotaped segments of classroom teaching are one means of meeting the need to increase the dimension of realism. The uncontrived examples of effective and ineffective teaching, such as those developed in this project, aid in creating a more realistic link between the college classroom and classrooms in which the students are preparing to teach.

The importance of developing strong working relationships with colleagues is a basic characteristic of university life. In this project, the establishment of a vigorous collaborative network with the public schools, the college administration, and faculty members in the college has paved the way for continued efforts. We have formed a group of friends--the advisory committee--who will continue to work with us. They have offered to serve as liaisons with others in their schools who can be of help as our efforts continue. Besides the relationships we have created, the overall mechanism for cooperation between the university and the schools has been established and can serve as an important model for future work. When it is necessary to initiate new contacts with additional public schools, the products that we have and the enthusiastic comments of the committee will become powerful tools in creating new relationships--particularly if new schools want to check our "references" concerning the nature of the work we do.

The value of federally funded projects in building a robust graduate program is also widely accepted principle in higher education. The excitement of working on a new project, meeting new people, making arrangements, carrying out the design and production of materials, and following through with field tests and evaluation are vital ingredients of graduate work.

The aura of significance that the project took on influenced other graduate students than those who were directly involved as they began to understand more about the nature of research and development of these issues in education. Comments ranged from, "It never occurred to me that I'd need to learn this much about videotape editing and production," or "I didn't realize that my work in ed psych would have practical applications like this," to "What would happen if we reconfigured the field test to include three experimental groups instead of one?"

As a means of focusing effort on the revision of materials, course content, and student activities, the project exerted a powerful influence. Unlike local work sponsored from within the college, or the routine revising of courses that faculty members do on their own, there is greater significance in working on a federal project. An outside grant always attracts more attention than local efforts, partially because the necessary periodic reports require that a credible and defensible accountability system be in place.

We also have fairly substantial anecdotal evidence. For example, students say, "...more class time should be devoted to post-activity discussion...[we] need to talk more about them in class...view more in class so we can discuss...make assignments that demand the student to think how they can apply what they see to new situations."

Advisory committee members said, "Based on my positive experience with this project, I would feel honored and grateful to be asked to serve again. I enjoy feeling that I, as an educator, can make contributions to the improvement of my chosen field.", or "I know my actual involvement in the beginning certainly has changed from the first time you came to our school and presented the project to our teachers. I'm pleased to have been included. It is an excellent way in which we can all work together in helping to produce the best teachers we can."

And from the teachers in the multisectioned course in elementary education: "The encapsulated view of the teaching behaviors...very focused, was a good reinforcement of concepts that were read about and talked about. The varying terms were a problem, but the students need to focus on the concepts instead of the terms. Sophomores had trouble justifying the differences in terminology. But terms vary between courses too...they haven't had much experience transferring." "The concept of cooperative (collegial) learning needs to be developed...to explain what the preservice teachers think and why they think it. Free response sheets to write comments on are good. It would be a nice idea to have students write their critique sheets for each other, and not just for the instructor."

We think these outcomes occurred because the modules were new and different, and provided a dynamic alternative to "read-a-book, write-a-paper, take-a-test." Too often in teacher education, the students are lectured about teaching. The interactive modules gave them a chance to see actual teaching, to read actual research, and to try their hand at assessing natural, uncontrived classroom teaching.

As a result of three years of development and field testing a number of discoveries about needed changes have been made. For example, the use of technology for delivering instruction places students in a new role. They have more responsibility for learning, and--if the interactive video lessons and accompanying learning materials are properly designed to maximize interaction--the student is required to take a more proactive, assertive role. It now appears as if too much reliance was placed on students' ability to synthesize information. More discussion with others in the class, a greater amount of live interaction, and directed inquiry from the teacher might make the material learned from the interactive video lessons more meaningful.

The role of the advisory committee could be enlarged, with more responsibility placed on the members. At first it seemed as if committee members would look upon their responsibilities as "extra" duties, separate and distinct from their primary occupation as

teachers. This proved not to be the case. The advisory committee members were, in fact, eager to become involved in the project and probably would have been quite willing to carry out additional tasks, such as playing a greater role in the preparation of progress reports, screening videotapes for good examples of teaching behaviors, and working to a greater extent with their fellow teachers in helping them prepare to be videotaped.

As the project developed, it became clear that it would be necessary to carry out a fair amount of video production. The process of acquiring videotape of a classroom teacher involved the use of two video recording systems, microphones for recording sound, and a great deal of post-production editing. One system was used to record the teacher; the other covered the class. Thus, two concurrent videotapes were made each time a classroom was recorded. Since each featured behavior required seven or eight selected examples, the bank of tapes from which these examples were drawn needed to be large--it has now grown to include approximately fifty 45-minute tapes. In order to minimize the amount of taping and editing it would have been more practical to reduce the number of finished lessons. Fewer behaviors, such as four or five, would have been sufficient to test the efficacy of this new method of instruction instead of striving for a finished number of nine lessons. As it turned out, four of the interactive programs were used a great deal more than the others because they were considered more important and fundamental to the methods course in which they were used.

Finally, it now appears as if students have the almost exclusive interest in seeing examples of teaching at the grade level they plan to teach, and in the subject area they anticipate teaching. It seemed to the advisory committee that teaching behaviors could be considered somewhat generic; motivation, for example, should consist of generalized, universal traits not associated with the grade level or subject area. Students did not share that view, however, and consistently requested examples that were in their area of preparation. Toward the end of the project, we found ourselves choosing more and more of the episodes that portrayed very effective teaching. The committee discussed this point a great deal, and felt some obligation to present a balanced picture of teaching behaviors, ranging from the very ineffective to the very effective. But an interesting psychological barrier arose in the quest for examples of ineffective teaching. It seems that no one wants to be that sort of teacher, even if the purpose is to illustrate a case for preservice students. (Incidentally, we think we are on the track of a few excellent teachers who may, after all, agree to serve as "bad examples." It is our hope, of course, that the contrived situations they "script" will appear to be realistic and credible when students see them.)

IV. IMPLICATIONS FOR OTHERS

The major implications of what we've done are related to changes on the local level within programs in teacher education here at the university. If it works for us, however, we feel it will serve as well in similar programs on other campuses. (This contention is described more fully below, in a discussion of the implications of this project at the national level). Changes also may be felt in the public schools from which the advisory committee was drawn. We have found already that one school in particular has used the tapes we made of their teachers for an in-house inservice session. The taped teachers served as moderators during discussion of their teaching.

On the local level, we sense the following implications:

1. Need to continue to involve staff at Iowa State University and an advisory committee to foster incorporation of the materials during the very early stages of anticipated use. A committee's broad base of opinion helps ensure that a well-balanced program is developed. We recognize that advice of this sort is

tantamount to joint planning of a course--a process that may need encouraging at the university level.

2. Need to provide adequate opportunities for discussion so that students can defend their position, engage in reflective analysis, and analyze strengths and weaknesses. The process of reflective analysis may be particularly valuable in creating the introspective and thoughtful climate that fosters ability to assess teaching.

3. Value to graduate students working in the program. As mentioned, the stimulation of this funded project brought a climate of vitality and realism to normal graduate-level activities. Course work, theses, and dissertations seemed to take on a new level of significance as students encountered project activities on a daily basis.

4. Value of having undergraduate students work from a research base. However, it must be recognized that the research is not always clear about the strengths and weaknesses, or effectiveness/ineffectiveness of a certain behavior. This caused students some concern, particularly after we had promoted a "knowledge base" as fundamental to the process of assessment. Students apparently presumed that teaching is black or white, right or wrong, and they had difficulty making judgments in that murky middle area containing few absolutes.

5. Need for more examples of teaching behaviors, particularly those that are neutral or negative. One of the criticisms of the current materials is that "...the teachers are all so good." Students might profit from seeing some problem or marginal teachers. As mentioned above, the committee struggled with this question and decided for the time being to emphasize positive behaviors. They recognized the need to present a balanced view, however, and agreed that this might be a goal to strive for in future production.

At the national level, several considerations should be kept in mind, including:

1. Use of model teaching episodes such as those we have produced in other teacher education programs on other campuses. Serious inquiries from others led to the establishing of contact with three teacher education programs in which the use of the project materials seemed suitable. For a variety of reasons (an illness, a faculty improvement leave, some hardware problems) these field tests are under continuing implementation.

2. Difficulties of exporting the lessons if the local user does not have compatible gear. This seemed to be a major problem; both we and the users of the materials were disappointed that the lack of suitable video players, computers, AND qualified local technicians proved sufficient to block continuation of field testing on other campuses.

3. Development of episodes for use by state agencies who are in the process of creating evaluation or assessment systems for their teachers, in which videotapes of teaching episodes are needed. With the increased interest in teacher assessment in a number of states, interest centered on our unedited, original video footage.

4. Mechanics for forming cooperative networks that involve higher education and the public schools, and for whom our process might serve as a prototype.

The adoption or adaptation of our materials and techniques in the educational community at large might be influenced by the following observations:

- A preoccupation by students and teachers that, (1) the realism of teaching must be brought to the classroom, and (2) technology is here to stay and can make a contribution to teaching and learning by reducing the labor intensity of live teaching and by gently shifting the responsibility for the process from the teacher to the student.

- Stimulus for discussion, reading, argument, and a reflective analysis of teaching. When you can say "What do you think of this teacher?" and base the question on a videotaped segment that has been especially chosen to illustrate a specific behavior, the situation in which this takes place becomes more immediate and exciting.

Not all of our experiences have been favorable, however. Some of the difficulties we have encountered included:

- Need for compatible equipment and qualified service personnel wherever a field test is anticipated. The somewhat unusual configuration of equipment makes it necessary to have contact with qualified and knowledgeable service technicians or media specialists at the field test site. The equipment required for interactive video is not available as a single piece in one cabinet. Instead, it must be assembled by connecting together a videotape player, a television monitor, and a microcomputer--each of which requires several special cables. Even though the cables can be clearly labeled for easy connecting, a certain level of anxiety seems to exist on the part of anyone using a work station that contains the equipment. Few people, it seems, want to take responsibility for installing and maintaining the hardware to support interactive video. It would be much easier to handle the equipment requirements if a single machine, prewired and ready for instant use, were available. (One of the advantages of using newer developments, such as the Macintosh-based HyperCard, or the IBM InfoWindow is that these types of equipment are already set up and ready for use).

- Adequate in-service activities for adopter faculty--AND for students who will be using the materials. We had a tendency to make too many assumptions about the level of interest or the initial expertise possessed by those who used the materials. It would have more effective to provide systematic, thorough in-service workshops for all of those who were to use the materials. We discovered that personal contact is a necessary part of the "installation" of the hardware, the software, the supporting materials, and the overall plan for use.

V. INSTITUTIONALIZED FEATURES OF PROJECTS

At the present time plans are underway to continue the project after September 1988. The following features will be retained:

1. Use of selected modules in the laboratory portion of the sophomore level elementary education methods course. Currently we are holding meetings with the lead teacher of that course to work out the details of implementation for the fall semester, 1988. We already have recognized the need to include more opportunities for student discussion, more thorough instruction in the use of the materials and the instructional format to be followed, and increased information about the process of writing descriptions and assessments of teaching episodes.

2. Current production of a videodisk of teaching behaviors. Using college funding, graduate students who register for academic credit for the experience are making the videodisk. A variety of excerpts from the footage obtained for the project has been selected and assembled into a single videotape, from which the disk is being produced.

A new approach to instruction, based on the microworld concept, will be developed employing HyperCard or level three interactive video techniques. (A *microworld* is the term applied to both a process and a software package. Microworlds are meant to be "explored" using the process of free association or intuitive learning. Unlike traditional computer-assisted instruction, in which the program sequence is pre-set by the programmer, and in which the format is either linear or branched, a microworld is not meant to be executed by following a sequence. It is an information base in the same sense that a dictionary is an information base.)

There are commitments to continue development and expansion of selected project activities over a longer term. These include:

1. Intent to focus use of the materials in the elementary education methods course. This seems to be the most suitable "home" for the types of materials that have been developed, primarily because the examples now on hand are consist largely of teaching episodes in the K-6 range. The reason for more narrowly targeting the examples, as mentioned earlier, was to increase student acceptance of the materials.

2. Acquiring more videotapes from school classrooms. The public schools are committed to helping with this by allowing us to into their classrooms to make videotapes, by assisting in identifying those teachers who might be interested in becoming involved in the taping, and by assisting with the scripting of teaching scenarios that could be used to illustrate the teaching behaviors to be highlighted.

3. Periodic updating of the research-based monographs that serve as the foundation for the assessing of the videotaped teaching episodes.

4. Increased interest in the production and use of videodisks for microworld applications. The growth of interest in the Macintosh microcomputer's HyperCard concept, and in level three interactive video systems (such as the IBM Corporation's *InfoWindow*) has been a stimulus to adapt ideas from the project to these new media.

These efforts described above will continue as a result of the stimulus this project has created. The level of visibility of the efforts of the past three years has made the work attractive within the college and beyond.

VI. OVERALL STRENGTHS AND WEAKNESSES & LESSONS LEARNED

The strongest and most positive effects of the project include:

- Development of close ties with school--so much so that we now have established a collegial working relationship with them. This has led to a "multiplier" effect; participation in the project acts as leverage when work with other schools may be negotiated.

- Renewal of content and teaching techniques found in methods courses at the university level. The benefits are primarily to faculty and their students, both those directly involved in the design and production of materials, and those who are the beneficiaries through their use of the materials.

- Heightening of interest in new instructional configurations of educational technology, in particular, serving as a model for graduate students and faculty in the college. The open, dynamic system of development that the project exemplifies has served as an example both to those involved in the project, and to the outside observers.

The least effective aspects of the project include these observations:

- The nature of the interaction within the lessons; students made the observation that it was sometimes trivial and required low-level types of responses.

- Reliance on the hope that those who used the materials would give adequate attention to the research base. We were not always sure that users of the materials--especially those who used the materials off campus--took suitable responsibility for acquiring sufficient knowledge on which to base their assessments of teaching.

Based on what we now know, if we were able to begin the project anew, we might modify our procedures in order to:

- Use videodisk technology instead of interactive videotape. It is necessary to hold access time and response time to a minimum of only two or three seconds. The mechanics of a videotape are such that many seconds are required for the system to find and play the desired segments. Frame-to-frame access time with a videodisk rarely exceeds two seconds, making it possible to find virtually any footage on a disk instantly. This quickness figures importantly into learning styles and into the learner's need for nearly instant communication with the system.

- Strive to target grade levels at the outset, more or less ignoring a contention that teaching behaviors are generic and universal across grade levels and subject areas. This is a point that bothered students a great deal, and dissatisfaction over this issue may have influenced their feelings about the overall efficacy of individualized, interactive video lessons.

- Work more closely with college faculty to plan for systematic infusion into a course. The presumption that everyone would openly welcome the project was not always true. Cultivation of the concept was necessary for good, solid adoption. A closer tie with university faculty, to give them a greater sense of ownership by working more with them and offering more inservice opportunities would contribute to the success of the project.

The most important aspects of human resources to capture were the confidence and support of the teachers, university staff, administrators, and students. Without this support system, the adoption and use of the materials would not be possible.

Financial and institutional resources to capture included moral support, a positive public relations climate, "hall talk" enthusiasm, and money. Top-down support for a project such as this one sets the example and establishes a positive tone for others to follow. If it seems to be a company project, it is generally more widely accepted by everyone on the staff.

VII. PRODUCTS AND DISSEMINATION ACTIVITIES

The primary products from the project include a collection of interactive video modules that are used in the study and assessment of the teaching behaviors. Each of the behaviors has two corresponding modules; an *instructional module* and an *assessment module.*

An instructional module runs between 15 and 22 minutes in length, and contains six to eight examples of the featured teaching behavior. The corresponding assessment module is shorter--usually 12-15 minutes long.

A description of the modules is attached to this report, as Appendix A of the Project Portrayal. The videotapes themselves are not included here, although scripts of the modules could be made available.

A set of monographs, one for each of the nine teaching behaviors, accompanies the modules. Each monograph is two to three pages long and represents a brief synopsis of the literature that pertains to the behavior. The monographs accompany this Project Portrayal as Appendix B.

A variety of student guidebooks have been used to provide information about the modules and their use, to students and teachers. These guidebooks have changed from time to time, depending on the nature of the field test being conducted and the number of modules being used. (Field tests were conducted with fewer than all nine of the modules, in order to meet local needs and to fit the materials into existing schedules and time frameworks, and to take into consideration the number and types of students involved, and the nature of the courses or conditions under which the field tests were conducted.) A sample of the types of guidebooks developed for the project will be found in Appendix C.

A cognitive test was developed and used for the major field test conducted during the 1987-1988 academic year. This is a 40-item multiple choice test covering content found in the modules and in the monographs, covering the teaching behaviors *motivation, communication, setting and resources,* and *explanations.* The cognitive test is attached as Appendix D.

A variety of feedback forms and surveys provided information on student attitudes about the nature of the instructional system, the content and format of the modules, and other opinions. These are included as Appendix E.

An information package has also been used to answer inquiries about the system that have come to attention by phone or mail. This includes an explanatory letter that is written to answer specific questions presented by the inquiry. Each cover letter is different because each query is based on different motives and needs. Usually, however, the return package of information contains some or all of the items described above, and found in the appendices.

Some of the dissemination activities have been of a face-to-face nature, carried out by the project director or others connected with the project. In several cases, we have had visitors from other campuses who have learned about the project through news items in professional publications or by word-of-mouth. The project is well known in the College of Education and many faculty members have mentioned it to others during the past few years. Presentations have also been made regionally (Iowa Educational Media Association, the Iowa Curriculum and Instruction Conference, the college-sponsored national Conference on Assessment of Teacher Education Students in December 1987). As a component of presentations on the national level, a description of the project has been included in other presentations about College of Education activities and curriculum and instruction.

The specific audiences reached in these presentations were college and university professors, public school teachers and administrators, and area, regional, state, and national professionals in education. The largest proportion of these groups has been classroom teachers, at an estimate of approximately 75%. Their reactions have been interesting, but not necessarily unexpected. Highlights of those reactions include:

- Recognition of the innovative nature of the system being used in the education of preservice teachers, including some surprise in learning of the concept called *interactive video.*

- Skepticism about the use of the technology outside a university environment, with expressed concern over the acquisition cost, maintenance, and operation of the equipment.

- Concern for the amount of time required to design and produce the software needed to undergird the instructional system.

- Agreement that a knowledge base of research about teaching behaviors is important, but nevertheless some tendency to dismiss the significance of the research because of its failure to provide definite guidelines for teacher behavior and performance. The result appears to be a reliance on personal experience and intuition when it comes to acquiring a personal style of teaching.

- Realization that teaching styles are complex and not amenable to simple, clear-cut analysis.

The project materials will continue to be used after the funding period closes, and we hope that a stronger and larger base of information can continue to be assembled to more sharply define the strengths and weaknesses. Out of this continued effort we anticipate increased activity in the areas of research and dissemination.

Some of the anticipated dissemination activities following the closing of the project include:

- Publications

- Concurrent sessions at conferences

- Demonstrations for those visiting

- Making the materials available to those elsewhere who might be interested in using the system.

"I believe the influence of this project to date, as a result of dissemination activities, includes a high degree of visibility for the use of contemporary instructional technology to deliver information in new configurations. As a means to encourage individual study of teaching behaviors, to reduce the labor intensity connected with face-to-face teaching, and as a stimulus to encourage reflective inquiry and analysis, the project materials have a great deal of promise."

APPENDIX A

A DESCRIPTION OF THE INSTRUCTIONAL AND ASSESSMENT MODULES

This document describes two key components of the Teaching Improvement Model, the interactive video modules that illustrate selected teaching behaviors (instructional modules) and the interactive video modules that show teaching episodes for the purpose of assessing the effectiveness of selected behaviors.

The teaching behaviors each have a pair of modules; a module pair consists of one instructional module and one assessment module, and they are studied in that sequence. While the actual videotape time for a module averages 12-18 minutes, the module requires a 50-minute working time because of the embedded tests and the interactive segments.

The following section provides general information about the instructional assessment modules. This is followed by a section that describes each of the modules that have been completed.

General Information

Instructional modules are interactive video lessons about 15 minutes in length. Several interruptions are built into the lessons, calling for student responses. Rarely is multiple choice used. More often a word, phrase, or short paragraph is called for. These interactive opportunities ask students to furnish their opinion about what should be done in a certain teaching situation, or they require suggestions for alternative teaching strategies.

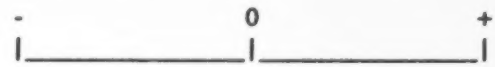
An instructional module may contain 8-10 brief excerpts, or "teaching moments," that illustrate an aspect or element of the teaching behavior around which the module is designed. The segments are linked by voice-over bridges that serves as (1) recap of the previous segment, and (2) an advance organizer for the next segment.

Thus, an instructional module is a video illustration of the behavior and its elements described in the research-based monograph. Reading of the monograph is required prior to taking the instructional module, and each module begins with a pre-viewing test on the computer to determine how well students understand the research base that undergirds the examples chosen to illustrate the module. A post-viewing test, also on the computer, measures the level of understanding acquired from the instructional module.

Each instructional module is accompanied by a second tape--an assessment module. The sequence of use, then is (1) monograph, (2) pre-viewing test, (3) instructional module, (4) post-viewing test, and (5) assessment module.

Assessment modules average 15 minutes in length and present a more or less contiguous classroom episode. A minimum of editing has been done, though cutaways to the students in the class are used to show reactions to the teaching behavior.

Participants rate the teacher's behavior on each of the individual elements comprising the teaching behavior depicted in the videotape using the following 3-point scale:



Participants also rated the overall effectiveness of the demonstration of the teaching behavior using a 4-point rating scale that ranges from ineffective (1) to effective (4).

Results of a student's selection on these scales are recorded on a floppy disk for subsequent analysis and correlation to demographic information supplied by that student.

Finally, the assessment module concludes with a brief self-analysis by the teacher who was featured, or by other teachers or college methods instructors who discuss their ratings and analysis of the demonstrated teaching behavior.

SETTING AND RESOURCES

The seating pattern, bulletin boards, work stations, media and other special materials as needed for the subject and grade level, and interaction of the teacher and students with setting and resources.

The 15-minute interactive video instructional module illustrates a variety of classroom settings and the resources within them. Eight short examples of teachers effectively using their setting and resources are feature, including effective use of a large space for teaching movement with music, the overhead projector in a student-centered activity. The quality of the materials, their proper use, the need for a wide variety of materials, a versatile classroom space, and the use of materials and a setting suitable for the grade level and content area are emphasized in this instructional module.

The accompanying assessment module features the "opening ceremonies" in a 12-minute segment of a kindergarten class, including songs, review of the daily "helper chart," pledge of allegiance, and counting with ordinal numbers. A 12-minute discussion with the teacher serves to debrief participants who made an assessment of the teaching and provides feedback for them to verify the accuracy of their assessment ratings.

MOTIVATION

Stimulation of students to learn by being enthusiastic encouraging new ideas, and fostering independent thought.

The 21-minute instructional module includes 11 short examples of teachers exhibiting the elements of motivation: Expectation, Involvement, Success, and Enthusiasm. Beginning with selected commercials from broadcast television to illustrate aspects of motivation found in everyday life, the lesson uses elementary and secondary teachers in episodes involving weather (2nd grade), fractions (2nd grade), creative writing (4th grade), the Aztecs (6th grade), science (3rd grade), Spanish (10th grade), and kindergarten (song and movement), among others.

A 21-minute assessment module showing a fourth grade class engaged in writing and then reading stories from the "author's chair" is provided to assess the effectiveness of the teacher's portrayal of motivation. Seven minutes of the teacher's feedback and self-assessment follow the teaching segment.

COMMUNICATION

Attention to good voice modulation, volume control, and proper grammar. Effective body language, gestures and eye contact indicate that the teacher is listening to students; some movement about the room is used.

The instructional module on Communication is nearly 19 minutes long, and contains six examples of classroom teachers exhibiting the two elements of communication; Sending and Receiving. Beginning with an example from high school Spanish to show a rapid sending/receiving sequence between teacher and students, the next segment compresses time to present a string of teacher responses to students' answers. Nonverbal messages are shown being received and sent through facial expressions. The effectiveness of the teacher putting a hand on a student's shoulder is shown as a means of communication, and the technique is discussed. Interactive segments include the rating of three "praise phrases" (That's very nice) each spoken with a different type of voice inflection.

In the assessment module, a 16-minute portion of a fourth grade social studies class is presented on the subject of rain shadow deserts. The teacher exhibits examples of sending and receiving, and guides students through a worksheet and a discussion of items she has used to make a "survival kit." The lesson ends with a simulation, in which she helps students imagine that their classroom is a rain shadow desert. Conditions that would prevail in that environment are described by the students. This teacher discusses her own teaching in a 5-minute interview that follows the computer-administered assessment scales for the viewer to use.

EXPLANATIONS

Systematic development of concepts in a clear, concise manner by using the proper vocabulary level, suitable examples, and understandable analogies, as well as demonstrations and practical applications of concepts and theories.

The 19-minute instructional module contains six examples of elementary and middle school teaching. The Presentation of concepts is shown through a lesson on the Aztec Indians, followed by the element of Explanations termed Variety in which teachers use a number of ways and means to help students understand concepts in science and language arts. Suitability of the concept for the level of students is shown by a reading teacher using flash cards and felt board. Finally, Response to Students is illustrated by showing teachers' feedback to students in several different lessons.

The assessment module focusing on Explanations is 15 minutes in length, followed by an 11-minute segment that includes debriefing and self-rating by the teacher. The videotaped segment is the teaching of fractions in a 2nd grade class. The teacher is particularly effective in drawing on student responses to develop the concept of fractions, and exhibits a wide variety of responses to their answers.

INVOLVEMENT

The encouragement of teacher/student and student/teacher interaction seeking active participation and using a variety of instructional styles. Insightful questions, positive reinforcement, and equal attention to all students are important considerations.

An instructional module for this teaching behavior is 14 minutes long and features seven examples of involvement. Illustrations show Level of Involvement, Locus of Control, and Opportunities for Involvement in a high school woodworking class, a fourth grade social studies class, and other classes in chemistry, Spanish, elementary reading, English, and geometry. The focus of the module is on the degree to which the teacher fosters interaction in the classroom, with some peer teaching (.."work with your partner...") and small group work as well as traditional teacher/student interaction.

A high school Spanish class is depicted in the 16-minute assessment module. A unique feature includes extensive use of student-to-student interaction under the guidance of the teacher. Group involvement, choral response, and interaction with an audiotape show methods for achieving and maintaining student involvement. The teacher discusses the effectiveness of his teaching behavior with a fellow teacher in a 10-minute post-assessment feedback session.

KNOWLEDGE

Demonstration of comprehension of the subject and broad intellectual interests in a variety of other areas.

Seven excerpts (five elementary teachers and two secondary teachers) are used in the instructional module on Knowledge. Elements of the module include Accuracy, Completeness, and Versatility. In one episode a teacher allows two inaccurate "teaching moments" to occur; she catches one, but not the other. Students using this module are asked, during an interactive segment, to comment on the situation. A music class for second-graders, a third-grade science lesson, a ninth-grade lesson on hyphens, and a high school teacher discussing violence on TV are used in this module.

The assessment module features a second-grade science teacher (approximately 18 minutes) in a lesson on how animals hear. The hearing mechanisms for fish, birds, and mammals are discussed; people with hearing disabilities are mentioned; the referee's arm signals used in a football or baseball game are cited as means for communication; and the lesson ends with students "talking" to each other by signing with their hands. A videotaped self-analysis of her own teaching follows the computer-administered assessment that the viewer makes of this lesson.

EFFICIENCY

Operation of classroom in a business-like manner with little time wasted. Students know what is expected and are kept on task.

This 26 minute instructional module includes scenes from both elementary and secondary classrooms. In these examples, the teachers illustrate preparedness, classroom management, and pacing--some effectively and some ineffectively. In one example, an elementary language arts teacher has all materials arranged ahead of time so the class begins on time and runs smoothly. However, the example of a high school art teacher shows how much time can be lost due to misplaced pencils, glasses, and poor quality handouts. Several computer segments ask the student to review and then to suggest possible techniques that would facilitate efficiency.

APPENDIX B

SETTING & RESOURCES
10/30/86

As Dr. Volkemore (1974) suggests, flexibility and novelty should be inherent in many educational activities. Spontaneity and personal relevance will result if teachers provide the resources and the setting for their use; students then can answer their own questions as well as those of the teacher.

Setting and resources are defined as the physical surroundings and the materials the teacher and students use. These include:

- Bulletin boards
- Physical factors; heat, light, seating, floor covering
- Demonstration set-ups; plants, an aquarium, globes, maps, displays
- Media; TV, transparencies, slides, audiotape, computers

The materials and the instructional environment, according to Smith and Nagel (1972) offer these advantages:

- provide concrete experience
- motivate and arrouse interest
- increase retention
- develop continuity of thought
- contribute to growth of meaning and vocabulary
- provide variety in learning
- provide experience not otherwise easily obtained
- save instructional time

Klasek (1972) emphasizes the broad reach that learning materials offer when he says that "...studies have proven over and over that technology of today ...can carry out a full potential in education when educators accept it as a system and non-human resources into the total learning process."

To approach this topic more specifically, four elements are described below:

QUALITY: The professional appearance of the physical setting and of the resource materials being utilized.

- Is the room somewhat neat, clean, and well organized?
- Are the displays, materials, and media professional in appearance?

Watch for transparencies that are difficult to read, ditto worksheets that are unclear, sloppy bulletin boards, and boxes or stacks of miscellaneous material scattered throughout the room.

USE: The correct manipulation of the setting and resources

- Are the media used correctly...are transparencies "revealed" one line at a time...is film or TV preceded by the teacher's overview...are bulletin boards integrated into the lesson or merely used as decoration?
- Does the teacher move around to take advantage of the setting and resources...is the seating flexible to permit special configurations...can all students see and hear...?

Look for things such as comfortable furniture, sufficient lighting, freedom from distractions, cleanliness, effective bulletin boards, workable room arrangement, and utilization of the physical setting to enhance instruction.

VARIETY: The array of media, materials, displays, and classroom configurations that the teacher uses.

- Do the students use a variety of materials as they learn?
- Do the setting and resources lend themselves to learning through a variety of ways?

You can judge variety by looking at the types of bulletin boards, displays, and other static materials. Also observe if the teacher uses an array of different materials and media during instruction. You might try listing the variety of activities and materials students are involved with in a 10-15 minute period.

SUITABILITY: The appropriateness of the setting and resources for the content of the lesson...and for the students' learning level.

- Is the classroom suitable for both individual and group work...can the room be rearranged?
- Are the materials appropriate for the students and for the subject?

You would probably not use transparencies to describe a field trip through a newspaper publishing company; slides or videotape would be better; the field trip itself would be best.

Small group discussion could be best facilitated by rearranging desks; it would not be very successful if the room had fixed seating.

Revised 7/20/87
R. Weber, M. Tardiff

Organization

Organization refers to the systematic preparation of instructional events designed to facilitate the learning process. This characteristic is evident in successful teachers when they establish clear and achievable goals, plan activites to accomplish them, and communicate those goals to their students. Other components of organization sometimes include establishing rules and procedures, reacting to misbehavior, and monitoring and pacing classroom events (Doyle, 1980). "Organization" is thus a complex topic, and can be viewed from a number of different angles, with emphasis placed on any aspect that the researcher or teacher feels is most important.

Regardless of the concepts that are chosen, or their relative emphasis, a convenient method for discussing organization is to divide it into 2 elements. There are those activities that occur prior to the teaching... the planning for organization... and then there are those activities that occur during teaching that relate to maintaining organization.

- Planning for Organization -

The benefits of planning have been identified by a variety of researchers. Yinger (1977) found that for many teachers, having a planning routine helped to simplify the potentially complex activity of lesson construction. A decrease in the level of unpredictability and uncertainty in the classroom was cited by Peterson, Marx, & Clark (1978) as a benefit from planning. An increased sense of confidence and security was listed by teachers in a survey done by Clark & Yinger (1979) that was attributable to the practice of advance planning.

Clark and Yinger, after considerable research on the subject of teacher planning, found three main functions of the planning process. The first is that planning establishes a sense of direction for the lesson in the initial stages of preparation. The second function is in preparing the teacher for the presentation of the lesson, both mentally (the teacher thinks about how to present the material most effectively) and instrumentally (the teacher produces or acquires the necessary material). The third major function of planning is to guide and focus the instruction while it is being implemented.

In other words, effective planning establishes a goal for the lesson, clarifies the teaching strategies needed to reach the goal, and causes the teacher to become preoccupied with the goal so that the instruction is focused at all times.

Once the goal and its accompanying objectives are worked out the development of concepts can proceed. According to Gagne and Briggs (1979), concepts should be presented sequentially with mastery of each step achieved before moving on to more difficult ideas. New vocabulary words should be introduced as well as supporting visual material. Systematic attention should be paid to all accessory or peripheral information that facilitates understanding of the main ideas. During the organization of a lesson or a course of study, several specific techniques are suggested for students to improve their learning of concepts.

There should also be an attempt to link the course with previous learning -- that is, to help the students to build relationships among what they already know and the new ideas they are presented with (Wittrock, 1985). Students should also be taught how to use various learning strategies; techniques that facilitate the learning and remembering of new material. Advance organizers (concepts related to the content but broader and more abstract) can be presented before the instruction in order to increase the networking of ideas. (Royer, 1986) Mnemonics (techniques used to increase recall of factual data) can also be presented during the lesson presentation, and have been shown to be effective at all grade levels. (Snowman, 1986)

- Maintaining Organization -

To ensure that teaching and learning proceed smoothly, and that both the teacher and students stay on task, certain classroom events must receive attention. These include (1) continued focus on instruction, (2) reacting to misbehavior, and (3) communicating expectations.

Focus on instruction was mentioned above, identified by Clark and Yinger as being an important outcome of planning. It is referred to again here because it provides a continual theme for a teacher. Teachers are very active participants in the classroom... this includes helping individuals or calling attention to difficulties that are experienced by the entire class. Gump (1967) found that approximately one half of the teachers' acts involve instruction (questioning, feedback, imparting knowledge, etc.). The rest of the time the teacher were organizing student activities and dealing with deviant behaviors.

A great deal has been written about methods for handling misbehavior in the classroom, and many studies have been conducted to determine what happens and how the events should be dealt with. Cope (1978) reported that selections of management strategies were based on information about the student's history of deviancy, the nature of the act, and the setting in which it occurred. In another study, researchers found successful managers create order by establishing activities, anticipating potential misbehavior, and catching misbehavior early when it occurs (Emmer. 1980; Evertson & Emmer, 1982). This topic is too extensive to treat here though it is an important concern of new and inexperienced teachers. Techniques for handling misbehavior are often acquired more effectively in actual teaching situations. Anderson-Levitt (1984) and others found that actions that appear to be similar are reacted to quite differently by teachers when performed by different students at different times or in different contexts.

Along with a clear sense of organization within the lesson, students must also be aware of the teacher's expectations. the well-organized teacher is able to communicate these expectations because he or she is guided by them in planning the lesson. Once these expectations have been established, the organized teacher makes sure that all components of the instructional process are aligned with them -- the statement of objectives, the course content, and the testing procedures.

Look for evidence of organization while watching the tapes and ask these questions:

1) Does the teacher seem to have clear plan to guide the lesson, or does it tend to wander off track?

2) Is the teacher prepared with the necessary materials and do they relate directly to the lesson being covered?

3) Are transitions from one part of the lesson to the next smooth?

4) Has the teacher used techniques to link the new material with previously-learned concepts?

5) Does the teacher communicate clearly to the students specifically what is expected of them?

7/87
S.E

Efficiency

Efficiency is the classroom involves using the allotted time productively, and avoiding unneccessary interruptions or distractions that may interfere with the learning process. A number of studies designed to examine the efficiency of the classroom setting and activities have used "time-on-task" as a measure of students' actual engagement with the subject at hand, and have referred to this as "quality time" or "Academic Learning Time." (Berliner, 1979; Denham & Lieberman, 1980) A review of research by Bennett (1978) cited a number of studies supporting a link between student engagement (time-on-task) and academic achievement.

Efficiency is an important aspect of the teaching/learning process, because use of time is one of the few variables that the teacher is able to manipulate in order to improve student achievement. Productive use of time very often depends on the teacher's ability to manage the classroom as an organized learning environment where instruction flows smoothly.

Efficiency can be broken down into three major components:

- Preparedness
- Classroom Management
- Pacing

Preparedness on the part of the teacher refers to the teacher's readiness with materials, supplies, and equipment when the class begins or when moving through a transition of some kind. Brophy and Evertson (1976) found that in well-organized classrooms, "transitions lasted only a short time ... by contrast, transitional periods in less well-organized classrooms tended to be chaotic, with children confused and needing to ask the teacher what to do next." One study estimated that the average teacher wastes nine minutes at the beginning of each period (Good, 1983), while Gump (1974) found that the classes in one elementary school in his study spent nearly 20 percent of each day on "nonsubstance , 'getting organized' activities." Efficient teachers also expect students to be prepared and stay on task, while less-efficient teachers allow students to spend a greater anount of time getting organized, socializing, daydreaming, and moving about the room. (Bennett, 1978; Gump, 1974; Rutter, et al, 1979; Berliner, 1978)

The second component of efficiency, Classroom Management, encompasses a wide range of skills, all dealing with strategies for keeping a complex event (education) operating in an orderly fashion. Explaining the rules and procedures early in the year so that they are clearly established is one example of good management. (Doyle, 1980) Little time will need to be wasted on unimportant details if everyone understands "the system" and how it works.

Another useful management technique is the ability of the teacher to monitor a variety of activites, all occurring simultaneously. Several researchers have examined this skill and found a positive association with students achievement. (Kounin, 1970; Brophy & Evertson, 1976; Copeland, 1983; Schumm, 1971) Teachers need to be aware of how well the classroom machine as a whole is functioning and catch minor problems of inattention and misconduct before they blossom into major crises.

Other valuable classroom management skills includes flexibility when events take unexpected turns, consistency in dealing with students, and personal organization in handing administrative details, such as record-keeping and grading. (Doyle, 1980) "Classroom management skills correlate with student learning gains not only because skilled classroom managers maximize student engagement on tasks but because good managers also tend to be good instructors and vice versa. " (Evertson & Anderson, 1978)

The third major aspect of efficiency that influences student achievement is pacing - the speed at which the students move through the material. The efficient teacher must have the ability to maintain the forward momentum of the instruction at an appropriate pace, while taking the individual differences of the student into consideration. Successful teachers are "task oriented and businesslike in moving the class along at a brisk pace." (Brophy, 1979) Hestitations or lags in the flow of classroom activities has been linked to increased off-task student behavior in observational studies (Gump, 1967), and teachers seen as "successful managers" were rated highly in smoothness and momentum of instructional events. (Kounin, 1970)

Completely filling the available class time is another important aspect of pacing. In a study observing junior high classrooms, Doyle (1984) found that "the more effective managers were consistently able to fit activites to sessions [and] either let the bell interrupt the last activity ... or clearly marked the closing of a session with a distinct routine for dismissal." Emmer (1982) also found that successful teachers used standard routines to to begin and end classs, in order to set a consistent pace and engage students for the entire period.

While viewing the videotape, watch the classroom activites and observe how the teacher exhibits efficiency in its three components: preparedness, management, and pacing. Try to answer these questions:

- Does the teacher appear to be ready to teach the class, with materials, supplies, and equipment ready at hand?
- Are the students actively engaged with the materials, or do they appear to be daydreaming, socializing, or wasting time?
- Do the students seem to have a clear idea of the rules and procedures of the classroom?
- Does the teacher seem to be aware of what's going on in the entire room, even when several activities are occurring simultaneously?
- Is the pace appropriate for the students -- not too slow or too fast, so that students are occupied the entire class period, but not rushed along?

K.V.
10/14/87

INVOLVEMENT

Students enter the classroom with a variety of experiences and attitudes that affect their ability and motivation to learn. Regardless of how efficiently instruction is organized or how well a program is designed, some students need their involvement in the learning process reinforced. The teacher encourages student involvement by using a variety of instructional styles and by seeking active student participation in the learning process.

Meaningful involvement calls for the teacher to create learning encounters that will get students excited about learning and provide successful learning experiences. No longer are students to be viewed as inactive recipients of information. Through innovative activities and strategies teachers can help students to become more active and reflective learners.

A variety of labels and techniques can be used to characterize involvement, but two of the more common are time on task, and questioning. In some texts these may be treated under the heading of classroom management, and certainly the methods by which a teacher makes use of classroom time and handles questions and answers involve management. However, both time on task and questioning involve the student, and we have chosen to treat them as involvement concepts.

Time On Task...it is possible to account for classroom time by considering three categories, as described below:

- Available time...that time that school is in session, usually figured on the basis of a whole school year.

- Allocated time...time devoted to the subjects or activities in the curriculum, such as science, social studies, etc. Schmidt and Buchman (1983) report a great deal of variation in allocated time from school to school because (1)teacher preferences for a certain subject area vary, and (2)the local conditions...parents, community influences, and other indigeneous factors exert influence.

- Engaged time...Berliner (1979) and others have studied engaged time, which is described as the time students are actually working on schoolwork. He says it is positively correlated with achievement--a finding that shouldn't surprise anyone. Because of factors mentioned above it varies a great deal, however, according to Fisher and others (1978).

  This category can be divided more specifically into interactive, noninteractive, and unoccupied time.

There are basically three interaction patterns: teacher-student, student-teacher, and student-student. Ideally, a lesson with optimal involvement would incorporate all three interaction patterns. As Dr. Hunkins states, "Students will not become active learners unless they are provided with opportunities for becoming involved in their learning." (1976). Dr. Thier (1965) identifies four levels of involvement:

-- minimal involvement...student reads about something;
-- a degree of involvement...student becomes involved in classroom discussions about some subject matter;
-- a higher degree of involvement occurs when the teacher encourages the learner to experiment; and
-- highest stage of involvement...learner is totally involved in observing and studying phenomena, recording what occurs, and engaging in directly experiencing phenomena.

Questioning...studies of the use of questions by teachers indicate that, in some cases, hundreds of questions...and answers...may be a part of a typical school day. Early educators such as Socrates used questions as a basis of their teaching style, usually to good advantage. As Hunkins (1976) puts it:

> "Regardless of whether a teacher is functioning inductively or deductively with data, he/she needs to generate questions. And the questions that are created and the manner in which they are phrased and sequenced influences the quality, significance, and accuracy of the learner's conclusions and what is done with those conclusions."

The use of insightful questions helps students to become critical processors and consumers of information...questions are a means of increasing the interaction patterns and the degree of involvement.

Among the ideas to consider when you use questioning as an element of teaching are:

- Level...lower level "fact" questions...on one end of the scale ...and higher order "thought" or "problem solving" questions on the other. It may seem as if the higher level questions are more valuable and make a greater contribution to learning, but Winne (1979) reports that it makes little difference. Maybe it depends on the grade level, subject area, the nature of the questions, or perhaps the design of the research study that led to the conclusions. On that last point, when Redfield and Rousseau (1981) analyzed the same studies with diferent method they found that higher order questions did increase student achievement.

  It is essential, or course, to ask questions clearly and in a proper sequence. Jacobson and others (1985) suggest that a single question that could be answered in a variety of ways is usefel in increasing involvement of students. But this requires continued clarification..."redirection", as he describes it.

- Wait Time...once the question is asked, what happens? Usually an answer, or silence will follow, and the teacher may probe or prompt for an answer. That period of time, measured in seconds, between the question and a student response or a teacher probe/prompt is wait time. The typical teacher waits about 1 second, according to Rowe (1986). He claims there are advantages in increasing the wait time to 3 seconds or more, including lengthened

student responses, increased questions from students, and less overall discipline problems in the classroom. Changes also take place in the teaching: teachers prompt and probe more, they invite a wider variety of answers, and they seem to treat certain types of students more positively.

- Handling Student Responses...flexibility is the key, and the following suggestions are listed for your use:

  -- positive reinforcement, such as "fine", "OK", "good" promotes further student involvement

  -- prompts, such as "Can you tell me more about it..." or "That's a good start on the answer..."

  -- repeating the student's answer, to clarify it for yourself and others, and to guarantee that everyone in the class hears it

Other work on involvement through questions, conducted by Good and Brophy (1983) indicates that rephrasing the question, or providing the correct answer along with an explanation of how it was determined are effective techniques.

As you view the videotape for assessing the criterion of involvement here are some question you might ask:

- Who did most of the work in the class?
- Who raised most of the questions?
- In what activities were learners engaged?
- Who came across as the major performer...teacher or student?
- Just what were the learners doing?
- Are students encouraged to work together?

Dr. Beyer (1971) states that "the primary purpose of teaching is to facilitate learning...to stimulate it, guide it, direct, make it easier, and in general ensure that it happens. "...students must be actively involved in their learning and it is the teacher's major role to arrange the learning environment in ways that will facilitate student learning" (Hunkins, 1976).

Sensitivity

Sensitivity on the part of the teacher can be described as an awareness of the thoughts, feelings, and abilities of students as individuals. This awareness helps to build a sense of trust and rapport between students and teacher, and also creates an environment of positive personal and academic growth. "Classrooms are settings where a variety of social cues from teachers, some of which may be affective, are believed to have far-reaching implications for how students view themselves" (Graham, 1984). High self-esteem (while not necessarily the cause of success), appears to be one of the conditions required for achievement (Hamacheck, 1971), and students' self-concept is influenced by how they are treated by others (Helmreich, 1972).

The component behaviors of teacher sensitivity include the ability to recognize special academic needs of individual students, an awareness of non-academic (social, emotional, personal) student needs, and a positive approach to discipline or punishment.

Dealing with special academic needs, whether for slower students who need extra attention or for gifted students who progress much more rapidly than their classmates, is more work for the teacher, but it pays off for the learner. The Beginning Teacher Evaluation Study (BTES) conducted in 1974-75 found that effective teachers were able to respond to the needs of individuals, plus "achievement positively correlated to teachers who were successful with diagnosis and prescription of appropriate learning tasks." (Brophy & Good, 1986) Fox (1979), proposed that teachers develop program adaptations to improve the teaching of gifted students and provide additional enrichment or tutorial activities to meet these students' needs.

The non-academic needs of students are also accepted and dealt with by the sensitive teacher. This may simply mean seeing each student as a whole human being and recognizing their personal, social, and emotional qualities, as well as their intellectual strengths and weaknesses. In an article about the challenges of junior and senior high classrooms, Drinkard (1986) asserts that "Teacher attention to the emotional needs of students is necessary if we are to reach them intellectually." Several studies have been done in non-school settings which indicate that people perform better and derive greater satisfaction from life when they feel that their employers or leaders genuinely care about their personal needs and goals (Kahn & Katz, 1960; Sinclair, 1970; Holahan & Saegert, 1973).

The third component of teacher sensitivity is using a positive, problem-solving approach to discipline. In researching alternative methods of classroom discipline, Bayer (1984) interviewed several middle school teachers who were considered successful in their student-teacher relationships. The points emphasized were that these teachers spoke privately with offending students to resolve

problems (rather than embarassing them in front of the class), they relied on individual interaction to help students to cope and adjust, and they actively worked to develop a sense of mutual trust and respect. Goldstein & Weber (1981) found that discipline techniques considered "socioemotional" were positively related to on-task behavior, while "authoritarian" approaches were negatively related to staying on-task.

Sensitivity to students is a skill that falls clearly into the affective domain, where it may often be de-emphasized, but its importance is clearly seen in the development of the total student -- affectively and cognitively.

While watching the videotape, look for signs of teacher sensitivity by answering the following questions:

1) Does the teacher provide additional help to students who need it?
2) Are students given opportunities to work on other projects if they finish their work early?
3) Does the teacher appear to be an accessible and willing listener?
4) Are discipline problems handled discreetly and privately?

KNOWLEDGE

When attempting to assess teacher effectiveness numerous criteria come to mind, one of them being knowledge of the subject. The research evidence that exists generally leads to the conclusion that teachers who know their subject better are more effective teachers (Berliner, 1978, 1979; Medley, 1979, Rosenshine, 1979; Rutter, et al., 1979). The following elements of knowledge delineate the characteristics of the knowledgeable teacher:

1) Accuracy -- All information disseminated should be accurate and up-to-date. Information should be based on fact, not opinion. If clear and indisputable facts are not available, or if several conflicting facts are known, effort should be made to objectively point this out. Efforts should be made to incorporate recent research findings into the lessons. Accuracy includes spelling, use of correct grammar, and proper pronunciation.
2) Completeness -- In working toward comprehension, the knowledge of a lesson should be supported with specific examples and details. A definition is only one aspect of a concept...using numerous illustrations and related information will increase transferability of knowledge.
3) Versatility -- Teacher demonstrates the ability to integrate the knowledge across subject matter areas. Using a vast array of examples and illustrations to stimulate interest in the subject, the teacher attempts to make the knowledge relevant to the experience of each student. All examples and illustrations should be appropriate in content and grade level.

Since the elementary teacher is expected to have great depth in many curricular areas and the secondary teacher is expected to have great depth in a specific area, it becomes a demanding task to exhibit all of the points attributed to a knowledgeable teacher (Manatt & Stow, 1984).

So what constitutes a demonstration of thorough knowledge of subject matter? The Clinical Manual for Teacher Performance Evaluation (Manatt & Stow, 1984) put forth descriptors of subject matter competence. When assessing the videotape for the criterion of knowledge, ask questions such as the following:

- Did the teacher designate the purpose of the topic or activity?
- Did he/she relate specific topics or activities to content area?
- Were appropriate examples and illustrations used?
- Was accurate and up-to-date information presented?
- Did the teacher identify the subset of skills necessary for objective achievement?

When viewing a videotape for the criteria of knowledge use the above descriptions for determining whether the teacher is demonstrating a thorough knowledge of the subject matter. Keep in mind that a knowledgeable teacher should have sufficient command of the subject matter to serve as a guide and resource to the classroom.

The first phase of instruction is often the presentation of information through lectures or demonstrations. Done effectively, the teacher explains in a clear and concise manner the specific information of the lesson. A prelude to a good explanation is a well-planned lesson founded on specific objectives. Utilizing knowledge of the levels of understanding of the students in the class, the teacher should be prepared to present a variety of explanations.

The explanations should be at the proper vocabulary level, include suitable examples and contain understandable analogies. The teacher should provide demonstrations and practical applications of the concepts and theories. A good rule of thumb is to prepare at least three more examples than you think you will need.

As teachers, we need to remember that the students do not have the benefit of the years of experiences and subsequent reference bank that we possess. By following a theory of cognitive development one can identify the level of understanding necessary for a lesson and compare that level with the abilities of the students. Inappropriate explanations (overly complex or extremely simple) may often result in disruptive behavior.

A teacher will increase her/his effectiveness in delivering explanations if he/she realizes the counter-productivity of frustration and boredom. When attempting to explain something to a diverse group of students try to recognize the expressions of confusion, misunderstanding, and boredom, and be prepared to respond to such feedback with examples that are relevant to the students and appropriate for their level of understanding.

The elements used in assessing the criterion of explanations are:

1) Presentation -- The material should be accompanied by clear directions. It is important that it be broken down into manageable steps. Questions are used to generate tentative explanations.
2) Variety -- Many types of illustrations, analogies, and examples are used. They are aimed at various learning styles to facilitate the best learning of all individuals.
3) Suitability -- The illustrations, analogies, and examples are appropriate for explaining the concept being discussed, and within the frame of reference that students can understand.
4) Response to Students -- The feedback given to the students (in the form of illustrations, analogies, and/or examples) should assist in clarifying student misunderstandings as well as supply missing conceptual clues.

As you view the videotape for appraising the criterion of explanations, ask yourself questions such as:

- Did the students appear to understand the purpose of the lesson?
- Were the examples suitable for the grade level?
- Did the teacher assume the students knew more than they did?
- Did the teacher check for understanding?
- Was the lesson teacher-centered or student-centered?
- Did the teacher use questions to enhance understanding and involve the students in the learning process?
- How could the lesson have been improved?

Remember, the teacher is a major resource of knowledge for the student. Such a role requires fluency, flexibility and patience.

MOTIVATION

Most learning theories generally consider motivation to be of prime importance. One definition states that motivation is "...a process of arousing action, sustaining the activity in progress, and regulating the pattern of activity" (Young, 1961). In other words, motivation is what initiates behavior, what directs it, and what maintains it over time.

Teachers must realize that a single approach probably will not stimulate all students equally (Raths, et al., 1967). For this reason, one would do well to utilize several techniques when making a conscious effort to motivate a class of students. There is a difference in how motivated and unmotivated students view success and failure. While motivated students rarely consider the probability of failure, unmotivated students seem to have a preoccupation with failure and the possible consequences (Hudgins, et al., 1983). The high-gain teacher in motivating students creates a classroom environment that reflects a warm acceptance of students, along with consistency and high behavior expectations (Manatt and Stow, 1984). The classroom climate and its impact on motivation has two aspects...involvement and success (Manatt and Stow, 1984). Drs. Good and Brophy (1973) suggest that to provide a climate which insures involvement and success, one should use a brisk pace, monitor all students, stimulate attention and use variety in questioning patterns.

Theories undergirding research in classroom motivation are:

- attribution theory...to what does a student attribute her/his success and/or failure: ability, effort, task difficulty or luck (Weiner, et al., 1971; Weiner, 1975).
- needs theory...centers on behavior that is directed toward goals to satisfy human needs (Maslow, 1968, 1970).
- achievement theory...the need for success or the desire to avoid failure (Atkinson, McClelland, 1948; McClelland, et al., 1953).

These approaches to classroom motivation have been around for awhile and anyone choosing to enter the teaching field is encouraged to familiarize her/himself with these theories.

The following four elements are characteristics of motivation:

1) **Expectation** -- The teacher should attempt to create a climate that encourages students to attain their highest possible achievement. This requires careful monitoring so that each individual experiences appropriate expectation.
2) **Involvement** -- This refers to the conditions (questions, activities) that provide meaningful work for each student. The teacher should use methods that will stimulate creative expression and promote active participation during the lessons.
3) **Success** -- The teacher should provide for a measure of success for each student and give the appropriate positive feedback. The feeling of being successful in what one does provides motivation for further work.
4) **Enthusiasm** -- This is the degree to which the teacher exhibits a genuine interest in the subject matter, in the students, and in the teaching enterprise.

As you view the videotape to appraise motivation, ask questions such as:

-- Did the teacher encourage new ideas and independent thought?
-- Was the teacher enthusiastic and thereby stimulate the students?
-- Did the teacher promote students' belief in their own competence?
-- Did the teacher provide positive feedback resulting in productive thought about success?
-- Did the teacher communicate challenging scholastic expectations to the students?
-- Did the teacher use methods to stimulate creative expression, and creative thinking?

Motivational behavior can be rather illusive and subtle. It may take viewing the videotape few times to identify such behvaiors. However, it is a primary ingredient for effective teaching and time spent learning the finer elements of motivation is time well spent.

COMMUNICATION

Most appraisal systems on teacher performance recognize the importance of good communication. Effective communication as used by the teacher has to do with verbal fluency, logical sequencing, variety, and an intellectual give-and-take that goes beyond mere recitation (Manatt & Stow, 1984). Indeed, teaching depends on the teacher's ability to communicate. In that direct instruction usually begins with a presentation of information by the teacher, it is understandable that achievement is positively related to the verbal skills of teachers (Bridge, et al., 1979; Brookover, et al., 1979; Murnane, 1980).

Characteristics of effective communication skills include good voice modulation, volume control, proper speech and effective body language. In 1979, Dr. Burgoon conducted a study on the perception of speakers and found that teacher (and speakers in general) were rated more competent when their speech was perceived as more fluent, more pleasant, clearer, and slower. Although research concerning body langage is practically nonexistent, that which has been done (Galloway 1972) indicates that if teachers understand, monitor, and control body language, gains in achievement would be obtained. Gestures and eye contact indicate that the teacher is listening to the students. It is also suggested that there be some movement about the room

Attempting to communicate information and concepts through the spoken word requires good sequential planning and forethought. Students come to class with different interpretations of words. In order to maximize comprehension, the teacher must utilize a variety of communication stategies which encompass the range of understanding of students in the classroom. Remember, communication is interactive. This means that a crucial aspect of communication is feedback. Feedback from students is the best indicator of communication because students indicate their level of understanding while the teacher receives information as to the effectiveness of her/his teaching.

The elements of communication are:

1) Sending -- This includes verbal and nonverbal transmissions. The teacher demonstrates good voice modulation, volume control and proper speech. Eye contact, gestures, and mannerisms are used effectively.
2) Receiving -- The teacher is an active listener as shown by eye contact, nodding of the head, and verbal response to students. Teacher praises, elicits, and responds to student questions before proceeding.

The following questions concerning a demonstration of effective communication are derived from the Clinical Manual for Teacher Performance Evaluation written by Drs. Manatt and Stow (1984).

- Does the teacher speak clearly and put ideas across logically?
- Are a variety of verbal and nonverbal techniques used?
- Are the directions understandable and explicit?
- Does the teacher utilize probing techniques?
- Does the teacher provide structuring comments which clarify the tasks and help the lesson proceed smoothly?

The teacher demonstrates communication by the ways he/she sends and receives information. Therefore, the development of effective communication in the classroom is contingent on the model set by the teacher.

APPENDIX C

USE OF TEACHING ASSESSMENT MODULES

By

EL ED 268 Spring 1988

(R. Volker - 1/27/88)

During the spring semester, 1988, students in El Ed 268 will be using Teaching Assessment Modules, following the approximate schedule below:

1/27 - 2/5	SETTING/RESOURCES
2/22 - 2/26	COMMUNICATION
3/28 - 4/1	MOTIVATION
5/2 - 5/10	EFFICIENCY

- INSTRUCTIONS FOR USE -

1. Sign up in advance for a time of your choice at one of the 3 work stations in the Instructional Resources Center.

2. When you come in to view the module, check out a "TAM WORKSHEET" from the Service Desk in the Instructional Resources Center.

3. Go to the work station at which you signed up. The tape and disk will be in that area.
   NOTE: Only one tape and disk are needed.

4. Put the disk in drive 1.

5. Turn on whole system on power strip (if one is used): TV, computer, and video player should turn on.

6. Insert video tape into player.

7. System should proceed automatically.
   NOTE: If video player starts going F FWD . . . REW . . . F FWD . . .REW, first turn off the computer. Then press F FWD button on video player and advance for approximately 10 seconds. Stop the tape and turn the computer on. Then push PLAY button on the video player.

8. When finished, follow instructions from computer to shut down.
   DON'T REWIND TAPE.

9. Return your completed worksheet to the Service Desk in the Instructional Resources Center.

TEACHING ASSESSMENT

MODULES

STUDENT GUIDEBOOK

....a series of interactive video lessons
that illustrate selected behaviors that
teachers exhibit..... accompanied by
practice tapes to gain skill in
distinguishing the behaviors.

(Used in El Ed 345 - Spring 1987)

Developed by
Dr. Roger Volker
and
Educators from Iowa Schools
NIE Contract No. 400-85-1050
College of Education
Iowa State University

Spring 1987

...A WORD ABOUT THIS PROJECT

There is a need for students in Teacher Education to become involved in schools and in teaching activities early in their program. At Iowa State there already are opportunities for pre-student teaching involvement in which our students work with public school teachers.

Another approach...the one taken in these teaching Improvement Modules... is to "...bring the school clasrroom to you." The teaching, the teacher, and the students are presented to you in a series of interactive videotapes using a guided practice format. Advantages of this method include:

- Presentation of selected teaching behaviors, chosen to illustrate specific teaching behaviors
- Interruption of the taped teaching in order to ask you to comment on it, and to hear what the teacher has to say about it
- Selection of a time that you find convenient to work on the modules
- Inclusion of the research findings on teaching behaviors, providing a solid base from which you can form opinions and make judgments
- Standardization of the teaching you observe to facilitate discussion by you and others in your education class

The delivery system for learning about the teaching behaviors is called interactive video, and it uses a computer and video player. The computer puts information on the TV screen or plays the videotape automatically, but the system stops from time to time to let you make comments or answer questions. Unlike ordinary TV, where you merely sit and watch, the interactive system gets you involved in the lessons.

You'll be working with several important teaching behaviors.
Each is treated by a pair of interactive lessons; an Instructional Module, and an Assessment Module. You work through the Instructional Module first, and then use the Assessment Module to practice your skill at identifying the teaching behaviors.

Instructions for operating the system are included in THIS GUIDEBOOK, as well as the research-based Monographs on the behaviors you'll study. Estimated time to use an interactive module is about 50 minutes. A module pair takes about 100 minutes.

HOW TO USE A MODULE PAIR

STEP 1. SIGN UP

Go to the Instructional Resources Center and sign up in blocks of 1 hour for the time you want to work on the module pair of your choice. You can sign for more than 1 hour at a time. Your sign-up will be your reservation to use a work station.

- Sign up on the A-frame chart at either work station near the rear door of the IRC.
- Your reservation is held until 10 minutes after the period starts, after which the time is first come, first served.

STEP 2. READ THE MONOGRAPH

Study the monograph that pertains to your selected module pair, because there is a pre-test in the Instructional Module that you will be taking. Your answers are recorded on your Student Data Disk.

STEP 3. USE THE INSTRUCTIONAL MODULE...estimated time: 50 minutes

a. Get the videotape and its 2 computer disks at the Service Desk
b. Get your Student Data Disk
c. At the work station:
   - Insert the 3 labeled disks into the 3 labeled disk drives. Grasp each disk by the label...label side up. Insert and close the disk drive door.
   - turn on the computer, TV, and video player
   - insert the videotape

   NOTE: The system should begin to function automatically. If it doesn't give you an opening title, or if the tape alternates between F FWD and REW for more than half a minute, get help at the Service Desk.

The program is designed to proceed automatically, stopping from time to time for your participation. If you have problems or don't understand something ask at the Service Desk for help.

WHEN FINISHED...turn off the computer first...THEN press EJECT on the video player and retrieve the tape. (DON'T REWIND)

Take the tape and the 3 disks back to the Service Desk, and proceed directly to the Assessment Module ...if you have time.

STEP 4. USE THE ASSESSMENT MODULE...estimated time: 50 minutes

Instructions are same as for the Instructional module

A MODULE PAIR

Instructional Module

Monograph...a short synopsis of selected research on the behavior to be studied...

Interactive Videotape...a computer/videotape lesson with examples of the behavior...

- Entry test...over the monograph, to find out if you have enough background to go on to the interactive lesson
- Instruction...via interactive video...containing questions administered by the computer
- Post-test...over the tape, to find out how much you have learned from the module

Assessment Module

Classroom Teaching... a 12-15 minute videotape of a classroom teacher, to be "scripted" by you...and then assessed

Assessment...computer-administered scales for use in assessing the effectiveness of the behavior

- Rating of elements...using a -, o, + scale for each element... followed by teacher or jury comments
- Rating overall...using a 1 to 4 scale for the behavior, followed by teacher or jury comments

SETTING & RESOURCES
10/30/86

As Dr. Volkemore (1974) suggests, flexibility and novelty should be inherent in many educational activities. Spontaneity and personal relevance will result if teachers provide the resources and the setting for their use; students then can answer their own questions as well as those of the teacher.

1 Setting and resources are defined as the physical surroundings and the materials the teacher and students use. These include:

- Bulletin boards
- Physical factors; heat, light, seating, floor covering
- Demonstration set-ups; plants, an aquarium, globes, maps, displays
- Media; TV, transparencies, slides, audiotape, computers

2 The materials and the instructional environment, according to Smith and Nagel (1972) offer these advantages:

- provide concrete experience
- motivate and arrouse interest
- increase retention
- develop continuity of thought
- contribute to growth of meaning and vocabulary
- provide variety in learning
- provide experience not otherwise easily obtained
- save instructional time

Klasek (1972) emphasizes the broad reach that learning materials offer when he says that "...studies have proven over and over that technology of today ...can carry out a full potential in education when educators accept it as a system and non-human resources into the total learning process."

To approach this topic more specifically, four elements are described below:

3 QUALITY: The professional appearance of the physical setting and of the resource materials being utilized.

- Is the room somewhat neat, clean, and well organized?
- Are the displays, materials, and media professional in appearance?

Watch for transparencies that are difficult to read, ditto worksheets that are unclear, sloppy bulletin boards, and boxes or stacks of miscellaneous material scattered throughout the room.

USE: The correct manipulation of the setting and resources

- Are the media used correctly...are transparencies "revealed" one line at a time...is film or TV preceded by the teacher's overview...are bulletin boards integrated into the lesson or merely used as decoration?
- Does the teacher move around to take advantage of the setting and resources...is the seating flexible to permit special configurations..,can all students see and hear...?

4

Look for things such as comfortable furniture, sufficient lighting, freedom from distractions, cleanliness, effective bulletin boards, workable room arrangement, and utilization of the physical setting to enhance instruction.

VARIETY: The array of media, materials, displays, and classroom configurations that the teacher uses.

- Do the students use a variety of materials as they learn?
- Do the setting and resources lend themselves to learning through a variety of ways?

5

You can judge variety by looking at the types of bulletin boards, displays, and other static materials. Also observe if the teacher uses an array of different materials and media during instruction. You might try listing the variety of activities and materials students are involved with in a 10-15 minute period.

SUITABILITY: The appropriateness of the setting and resources for the content of the lesson...and for the students' learning level.

- Is the classroom suitable for both individual and group work...can the room be rearranged?
- Are the materials appropriate for the students and for the subject?

6

You would probably not use transparencies to describe a field trip through a newspaper publishing company; slides or videotape would be better; the field trip itself would be best.

Small group discussion could be best facilitated by rearranging desks; it would not be very successful if the room had fixed seating.

SCRIPTING SHEET

- SETTING AND RESOURCES -

Directions: Watch the assessment module tape on SETTING and RESOURCES and write down:

- What the teacher SAYS
- What the teacher DOES

You may find it helpful to categorize your notes into the elements of SETTING & RESOURCES, as shown below.

Remember...do not make value judgments ("The teacher began the lesson effectively") ...but merely record what happened ("The teacher led the Pledge of Allegiance").

Quality

Use

Variety

Suitability

MOTIVATION

Most learning theories generally consider motivation to be of prime importance. One definition states that motivation is "...a process of arousing action, sustaining the activity in progress, and regulating the pattern of activity" (Young, 1961). In other words, motivation is what initiates behavior, what directs it, and what maintains it over time.

Teachers must realize that a single approach probably will not stimulate all students equally (Raths, et al., 1967). For this reason, one would do well to utilize several techniques when making a conscious effort to motivate a class of students. There is a difference in how motivated and unmotivated students view success and failure. While motivated students rarely consider the probability of failure, unmotivated students seem to have a preoccupation with failure and the possible consequences (Hudgins, et al., 1983). The high-gain teacher in motivating students creates a classroom environment that reflects a warm acceptance of students, along with consistency and high behavior expectations (Manatt and Stow, 1984). The classroom climate and its impact on motivation has two aspects...involvement and success (Manatt and Stow, 1984). Drs. Good and Brophy (1973) suggest that to provide a climate which insures involvement and success, one should use a brisk pace, monitor all students, stimulate attention and use variety in questioning patterns.

Theories undergirding research in classroom motivation are:

- attribution theory...to what does a student attribute her/his success and/or failure: ability, effort, task difficulty or luck (Weiner, et al., 1971; Weiner, 1975).
- needs theory...centers on behavior that is directed toward goals to satisfy human needs (Maslow, 1968, 1970).
- achievement theory...the need for success or the desire to avoid failure (Atkinson, McClelland, 1948; McClelland, et al., 1953).

These approaches to classroom motivation have been around for awhile and anyone choosing to enter the teaching field is encouraged to familiarize her/himself with these theories.

The following four elements are characteristics of motivation:

1) Expectation -- The teacher should attempt to create a climate that encourages students to attain their highest possible achievement. This requires careful monitoring so that each individual experiences appropriate expectation.
2) Involvement -- This refers to the conditions (questions, activities) that provide meaningful work for each student. The teacher should use methods that will stimulate creative expression and promote active participation during the lessons.
3) Success -- The teacher should provide for a measure of success for each student and give the appropriate positive feedback. The feeling of being successful in what one does provides motivation for further work.
4) Enthusiasm -- This is the degree to which the teacher exhibits a genuine interest in the subject matter, in the students, and in the teaching enterprise.

As you view the videotape to appraise motivation, ask questions such as:

-- Did the teacher encourage new ideas and independent thought?
-- Was the teacher enthusiastic and thereby stimulate the students?
-- Did the teacher promote students' belief in their own competence?
-- Did the teacher provide positive feedback resulting in productive thought about success?
-- Did the teacher communicate challenging scholastic expectations to the students?
-- Did the teacher use methods to stimulate creative expression, and creative thinking?

Motivational behavior can be rather illusive and subtle. It may take viewing the videotape few times to identify such behvaiors. However, it is a primary ingredient for effective teaching and time spent learning the finer elements of motivation is time well spent.

SCRIPTING SHEET

- MOTIVATION -

Expectation

Involvement

Success

Enthusiasm

COMMUNICATION

1 Most appraisal systems on teacher performance recognize the importance of good communication. Effective communication as used by the teacher has to do with verbal fluency, logical sequencing, variety, and an intellectual give-and-take that goes beyond mere recitation (Manatt & Stow, 1984). Indeed, teaching depends on the teacher's ability to communicate. In that direct instruction usually begins with a presentation of information by the teacher, it is understandable that achievement is positively related to the verbal skills of teachers (Bridge, et al., 1979; Brookover, et al., 1979; Murnane, 1980).

2 Characteristics of effective communication skills include good voice modulation, volume control, proper speech and effective body language. In 1979, Dr. Burgoon conducted a study on the perception of speakers and found that teacher (and speakers in general) were rated more compentent when their speech was perceived as more fluent, more pleasant, clearer, and slower. Although research concerning body langage is practically nonexistent, that which has been done (Galloway 1972) indicates that if teachers understand, monitor, and control body language, gains in achievement would be obtained. Gestures and eye contact indicate that the teacher is listening to the students. It is also suggested that there be some movement about the room

3 Attempting to communicate information and concepts through the spoken word requires good sequential planning and forethought. Students come to class with different interpretations of words. In order to maximize comprehension, the teacher must utilize a variety of communication stategies which encompass the range of understanding of students in the classroom. Remember, communication is interactive. This means that a crucial aspect of communication is feedback. Feedback from students is the best indicator of communication because students indicate their level of understanding while the teacher receives information as to the effectiveness of her/his teaching.

The elements of communication are:

1) Sending -- This includes verbal and nonverbal transmissions. The teacher demonstrates good voice modulation, volume control and proper speech. Eye contact, gestures, and mannerisms are used effectively.
2) Receiving -- The teacher is an active listener as shown by eye contact, nodding of the head, and verbal response to students. Teacher praises, elicits, and responds to student questions before proceeding.

4 The following questions concerning a demonstration of effective communication are derived from the Clinical Manual for Teacher Performance Evaluation written by Drs. Manatt and Stow (1984).

- Does the teacher speak clearly and put ideas across logically?
- Are a variety of verbal and nonverbal techniques used?
- Are the directions understandable and explicit?
- Does the teacher utilize probing techniques?
- Does the teacher provide structuring comments which clarify the tasks and help the lesson proceed smoothly?

The teacher demonstrates communication by the ways he/she sends and receives information. Therefore, the development of effective communication in the classroom is contingent on the model set by the teacher.

SCRIPT SHEET

- COMMUNICATION -

Sending

Receiving

40-ITEM MULTIPLE CHOICE TEST

This is a 40-item multiple choice assessment to establish how much you already know about teacher behaviors. Choose one response that best answers or completes the statement. Use the bubble sheet to record your answers. Please do not mark on this test.

1. **At the beginning of the year, it is best to arrange the students' desks so they face the:**
   a) **teacher's desk.**
   b) **center of the room.**
   c) **front of the classroom.**
   d) **major instructional area.**

2. **Teachers often display enthusiasm by:**
   a) **sharing personal experiences.**
   b) **showing subject matter expertise.**
   c) **expressing feelings and excitement about the subject.**
   d) **A and C**
   e) **all of the above**

3. **A teacher selects instructional resources with regard to all of the following except the:**
   a) **activity**
   b) **learning situation**
   c) **length of class period**
   d) **instructional objectives**

4. **Learning resources such as pictures, slides, transparencies, etc. are classified as:**
   a) **print media.**
   b) **visual still media.**
   c) **community resources.**
   d) **visual-sound-motion materials.**

5. **Once teachers have developed a good motivation technique they should:**
   a) **use it frequently.**
   b) **avoid overusing it.**
   c) **use it to motivate slower students.**
   d) **only use it on rare or special occasions.**

6. Research has shown that allowing students to self-select the type of media to be used in lessons:
   a) increases learning by the students.
   b) has no impact on students' learning.
   c) results in less learning by the students.
   d) increases the effectiveness of the instruction.

7. Competitive activities:
   a) motivate students to achieve success.
   b) promote a congenial group atmosphere.
   c) should be used for routine practice tasks.
   d) increase students' intrinsic motivation for learning.

8. Immediacy behaviors refer to:
   a) action responses to certain stimuli.
   b) nonlinguistic actions used to communicate.
   c) actions that directly follow verbal responses.
   d) behaviors that communicate an urgent need.

9. The four major elements of classroom motivational techniques are:
   a) enthusiasm, rewards, competition, success
   b) competition, rewards, task-value, teacher expectations
   c) feedback, rewards, competition, instrinsic motivational strategies
   d) expectations, enthusiasm, incentive strategies, intrinsic motivation strategies

10. Proxemics refers to:
    a) voice elements.
    b) body movements.
    c) use of physical contact.
    d) use of interpersonal space and distance.

11. If a child's response is only partially correct, and a more complete response is desired, the teacher should employ the technique of:
    a) probing.
    b) restating.
    c) wait-time.
    d) clarifying.

12. Two major concepts, or elements, of communication are:
    a) praise and discipline.
    b) sending and receiving.
    c) explaining and inquiring.
    d) verbal and nonverbal transmission.

13. Asking precise and unambiguous questions that are brief and appropriately phrased demonstrates the teacher's:
    a) clarity.
    b) proper sequencing.
    c) declarative statements.
    d) preplanning for questioning.

14. The best method for showing students their success is to:
    a) give them verbal praise.
    b) provide appropriate feedback.
    c) display their work to the class.
    d) reward them with special privileges.

15. Which of these is NOT included in classroom incentive strategies?
    a) competition
    b) reward systems
    c) intrinsic motivation
    d) attention to the value of the activity

16. Teachers can make best use of THEMSELVES as a resource by:
    a) being available at all times.
    b) preparing materials beforehand.
    c) moving around the room during teaching.
    d) having students write information on the chalkboard.

17. If a student responds "I don't know" to a question, the most appropriate technique for the teacher to use would be:
    a) probing.
    b) discovery.
    c) wait-time.
    d) prompting.

18. Haptics refers to:
    a) voice elements.
    b) body movements.
    c) use of physical contact.
    d) use of interpersonal space and distance.

19. Research indicates that student achievement would be enhanced by all of the following verbal skills <u>except:</u>
    a) repetition.
    b) expressions like "sort of".
    c) expressions like "now get this".
    d) prolonged silence before information.
    e) maximum speech rate of 150 words per minute.

20. Researchers suggest they are many positive consequences for students when teachers increase response wait-time. Positive results include the following except:
    a) disciplinary reprimands increase.
    b) students' failure to respond decreases.
    c) the length of student responses increase.
    d) the number of questions students ask increases.

21. Alternatives to questioning include all of the following except:
    a) redirection.
    b) imperatives.
    c) indirect questions.
    d) declarative statements.

22. Studies suggest that after posing a question, teachers should pause:
    a) 1 to 2 seconds.
    b) 1 second or less.
    c) 3 seconds or more.
    d) approximately 10 seconds.

23. Students are able to achieve at their highest level when:
    a) the teacher sets appropriate goals.
    b) students compare their work with classmates.
    c) students set goals with the help of the teacher.
    d) students are assigned tasks ensuring immediate success.

24. When using structured and directive methods and materials, higher level students seem to:
    a) dislike activities.
    b) learn about the same.
    c) learn less productively.
    d) learn more productively.

25. A teacher's nonverbal behavior is generally softer and more respectful when criticizing and correcting:
    a) preferred students.
    b) low ability students.
    c) disadvantaged students.
    d) problem behavior students.

26. Paralinguistics refers to:
    a) voice elements.
    b) body movements.
    c) use of physical contact.
    d) use of interpersonal space and distance.

27. Teachers should select classroom learning resources in regard to:
    a) the activity, learning situation, and instructional objectives.
    b) the availability of materials, ease of use, and lesson structure.
    c) their prior knowledge of the media, ease of use, and student desires.
    d) the availability of materials, their prior knowledge of the media, and the activity.

28. A major guideline for effective media use is to:
    a) prepare your own materials.
    b) have clearly defined objectives.
    c) use pre-made, low cost materials.
    d) adjust the instruction to accommodate the available resources.

29. Research suggests that after establishing longer wait-time patterns, teachers tend to modify their teaching styles in the following ways except:
    a) exhibiting greater flexibility.
    b) increasing student performance expectations.
    c) increasing the number and decrease the kinds of questions asked.
    d) decreasing the number and increase the variety of questions asked.

30. The teacher designing many different responses to a single question would employ what technique?
    a) probing
    b) wait-time
    c) prompting
    d) redirection

31. Kinesics refers to:
    a) voice elements.
    b) body movements.
    c) use of physical contact.
    d) use of interpersonal space and distance.

32. According to research, the physical environment of the classroom:
    a) has little effect on either attitude or achievement.
    b) affects students attitudes and achievement equally.
    c) has a greater effect on students' achievement than on their attitudes.
    d) has a greater effect on students' attitudes than on their achievement.

33. Which motivational strategy involves designing academic tasks that are inherently interesting and enjoyable?
    a) Rewards
    b) Enthusiasm
    c) Intrinsic motivation
    d) Classroom incentives

34. Intrinsic motivation refers to:
    a) motivating a person prior to beginning a task.
    b) specific events that motivate a particular person.
    c) the value or pleasure a person associates with an activity.
    d) the natural occurrence of motivation in particular activities.

35. According to research, a teacher's nonverbal behavior provides cues about all of the following except his/her:
    a) feelings.
    b) attitudes.
    c) familiarity with the material.
    d) expectations for student participation.

36. A teacher wishing to discourage student-to-student interaction would arrange students' desks in which design?
    a) cluster
    b) modular
    c) horseshoe
    d) straight row

37. With regard to classroom setting; seating arrangements, traffic patterns, and activity space are considerations:
    a) of utilizing floor space.
    b) when planning for storage space.
    c) in managing classroom resources.
    d) in utilizing the entire classroom area.

38. Strongest research support exists for communication skill in:
    a) eye contact.
    b) teacher praise.
    c) teacher gestures.
    d) clarity of presentation.

39. The classroom area designated for small group instruction should be positioned:
    a) in a corner of the room.
    b) in the front of the room.
    c) by the materials to be used.
    d) so the teacher faces the room.

40. According to research, motivation:
    a) initiates, directs, and maintains a behavior.
    b) is a subtle and rarely used teaching technique.
    c) satisfies the desire in a person to do something.
    d) refers to activities or behaviors that stimulate interest.

APPENDIX E

TEACHER BEHAVIOR ATTITUDE SURVEY
Fall 1987 - El Ed 245

We are interested in discovering your rating of the importance of certain skills and behaviors you have as a person preparing to teach. It is also of interest to find out what kinds of skills you believe you already possess. You can use the form below to rate both. Use the bubble answer sheet to record your responses.

Rating Scale	
1 - Unimportant	4 - Moderately Important
2 - Slightly Important	5 - Very Important
3 - Marginally Important	

How would you rate the importance of:

	1	2	3	4	5
1. having a "philosophy of teaching."					
2. being able to assess a particular teaching behavior.					
3. observing a teacher, live, in a classroom.					
4. viewing a variety of teachers.					
5. discussing the use of particular teaching behaviors with peers.					
6. viewing various grade levels.					
7. observing a live telecast from a classroom.					
8. being able to critically analyze a classroom teaching example.					
9. viewing both good and poor models of teaching behaviors.					
10. having knowledge of research findings about teaching behaviors.					
11. viewing the teaching of a variety of subject areas.					
12. observing a videotape of classroom teaching.					
13. seeing a variety of classroom settings.					

Rating Scale	
1 - No skill	3 - Fair skill 5 - Excellent skill
2 - Marginal skill	4 - Good skill

How would you rate your skill in:

	1	2	3	4	5
14. knowing what to look for as you observe live teaching.					
15. assessing the effectiveness of a teaching behavior.					
16. learning about teaching behaviors by viewing selected teaching segments from a videotape.					
17. discussing strengths and weaknesses of a particular teaching example.					
18. expressing your "teaching philosophy".					
19. using specific descriptors and other technical terms to characterize teaching behaviors.					
20. learning about teaching behaviors by discussing examples with others.					
21. analyzing teaching behaviors.					
22. working with others to identify, discuss, and assess examples of particular teaching strategies.					
23. using research findings about teaching behaviors in order to effectively "communicate", "motivate", etc.					
24. working with peers to develop effective teaching strategies.					
25. learning about teaching behaviors by watching a live telecast of classroom teaching.					

APPENDIX F

Summary of OERI Team Comments
on the 3-year project
4/29/88

1. **INVOLVEMENT** -- how could we have improved our techniques for involving you in the decision-making processes that undergirded the project?

"You listened to our comments, often making notes and constantly thanking us for our observations. I felt included in your frame of decision-making. You often became more hopeful as a result of our observations. Even at times you seemed to come to insight as a result of listening to us. I felt listened to."

"It was good--big schools, small schools, urban, rural. The meetings were structured for involvement--very well done. The agendas were produced with involvement in mind. (A star in this area!)"

"Since you came into my classroom to get some video footage, I feel that I did have a higher degree of ownership than others who weren't on tape. As far as my involvement in decision-making, I felt that my input was considered but I didn't have or need to have direct involvement in higher level decision-making."

"I feel you did an adequate job in involving the group in the decision-making process. Your explanations & input made us feel the project was very worthwhile. I know my actual involvement in the beginning certainly has changed from the first time you came to our school and presented the project to our teachers. I'm pleased to have been included. It is an excellent way in which we can all work together in helping to produce the best teachers we can. Good agenda involvement. We always knew what was coming up."

"I feel that our 3 small groups would have benefited by meeting separately to discuss our objectives. Our large group sessions were few and far between. I realize there were many reasons for this. Our opinions were always received graciously!!"

"I wish that I could have led or at least have been a part of a sub-group of high school teachers in Des Moines. Valuable in-put from people who have been cooperating teachers over the years could have been gleaned. More taping of excellent teachers I work with would have made me feel even m,ore a part of the project. I am very proud of the one teacher who was taped for a segment. He was ecstatic about being asked and about the resulting video tape."

"The team could have been more involved by more frequent written progress reports with request for comments. The meetings were excellent."

"Time involvement was about right. Not always knowing was what was expected as the outcome or final goal caused some confusion. Willing to make adjustments as we sent along was appreciated. Excellent cooperation from the University. Much more work went into preparation by those teachers being videoed than anyone really realizes."

2. INFORMATION--did you receive adequate information (too much?. . .too little?. . .Just right?) . . . was the form of the information appropriate. . . meetings, phone calls, letters, reports. . .what is your reaction to the methods we used to keep you abreast of what was going on?

"I appreciated the personal visit to the high school two years ago to explain the project. I also have appreciated the personal phone calls before you sent the confirming letter. I like the way you began each meeting with a general overview of the project. Orientations like this refreshed us on the goals of the project as well as updated us on the progress since the last meeting."

"There could have been updates during the times between meetings. An open invitation to come and view the progress was always felt, but not finalized. I know that many of us were supportive enough of our involvement and collaboration that we would have come to Saturday meetings (in addition to the ones we had.)"

"During the time when I was most actively involved (taping sessions), the information I received was more than adequate. Phone calls seemed the most helpful. Once our taping was completed we had little contact until the group meetings. It would have been nice to know status; maybe an update type bulletin."

"Very good communication--you have been very thorough about telling us results etc. I would like to have had the end results before now. Update in between meetings would have kept us in contact."

"Again, I feel more meeting sessions would have been beneficial to our project. I do feel that the information that we received was more than adequate, very well organized and impressive."

"There was never a time when I felt I was not informed when I should have been. An important part of this project was our leader, Roger Volker, who developed a warm congeniality and trust. I always felt I could say what I wanted to at the meetings, and when I didn't hear how the project was going (no upcoming meeting announced), I always knew that he was hard at work and would inform us/call us together when it was necessary."

The information received was informative. The meetings were excellent and the interaction in the group was stimulating. A follow-up letter to individual teachers explaining how the tapes were being used would have given them more ownership in the project."

"More ongoing information to the committee to explain progress of project would have been appreciated. As a "grant team" member copies of more correspondence and project reports would have been nice. It would also kept us abreast of progress."

3. **ELEMENTS OF COLLABORATION**--how could we have more effectively spaced our contacts with you. . . did we meet frequently enough. . . were the meetings meaningful . . . should we have held teleconferences . . . written more letters . . . visited you more often at your schools?

"Meeting once a year caused me to lose touch with the project, but when we did meet I felt you gained valuable comments from the group members. Projects like this need the stimulation of outside reactions. You must have needed our assistance only periodically, so this should be the major consideration."

"The day long meetings were difficult. Half day meetings more frequently spaced would be better for me. The meetings were very meaningful--chock full! An update in between meetings would have been helpful."

"Meetings were frequent enough for my involvement. It was more difficult to keep abreast of the status of project; but more meetings wouldn't be necessary to remedy that. Others in our building were interested . . . maybe a follow visit to see finished products."

Contacts were good, but we didn't always know what to expect. We had no experience in what we were doing; so it took some floundering and experimenting on our part to exhibit what you wanted. The idea was excellent, but how to implement it was another matter."

"I was not visited at my school due to many reasons I'm sure. I would have gladly offered my school to be taped! Many, many excellent teachers are out in the "real world!"

"I definitely felt that the meetings held in Ames were very well-organized with time-on-task agendas. I felt welcomed and felt my ideas were listened to readily and that I was contributing to a worthwhile cause -- the education of future teachers. Being included in more meetings and including more teachers from Hoover High in Des Moines where I work would have made me feel more involved, but at the same time I don't know that I could have!"

"A follow up visit to interact with staff was to have been planned. Due to illness and death in my family I was the one who did not follow through."

"As explained in 1 and 2, more letters updating everyone would have been better."

4. **OBSERVATIONS**--as a result of your participation in this project what observations, comments, or opinions have you developed about:

o The University/College of Education:

"I'm impressed with your commitment to helping perspective teachers see teaching as a process with definable characteristics. i like the way you are focusing on real situations and illuminating these teaching moments with analysis and research."

"We need to be teaching how to teach not what grade level to teach. Why don't more classes take advantage of something like this?"

"I'm glad to see the University getting out into the field to see what going on in the classroom; it's not all theory . . ."

"I feel that it has been a very rewarding experience with the University working with the public school. I think we both have a lot to offer."

"After teaching for 15 years and receiving student teachers from numerous colleges and universities, I've always held Iowa State's College of Education in high regards. Your student teachers arrive with a vast amount of knowledge and self-confidence! I've been very impressed."

"I am impressed with the quality of interest in improving teaching skills."

"The student teacher program should be enhanced by the variety in course offerings."

"Continue to be impressed and appreciative of university support to the public school. Please continue to attempt to reach out and assist public education."

o Your own school and your role there:

"You were eager to use classrooms in our school. You constantly encouraged us to discuss the project within the realities of our situations. I am especially impressed with your tuning in to the social politics of schools to decide on a direction of how to market or to use the modules."

"My teachers are very interested in classroom management. If they could use this project, they would love it."

"My own school was very supportive and cooperative. They were open to making the bridge between the University and the school in order to work on this project."

"I felt very insecure at first, not knowing what all was involved. I have always felt I would do all that I could to help anyone who was interested in teaching to like it as much as I do. I thought helping student teachers was the only way, but I'm hoping this program will also prone to be of great value to students."

"These tapes have really been eye openers. After viewing them I always do some soul searching into my philosophy of education and my teaching style. Being assistant principle I feel I've gained a greater awareness of different teaching styles."

"I am impressed with the number of teachers who expressed an interest in the project and were jealous of the teacher who was taped. Many felt left out!"

"The experience confirmed my beliefs in the high quality instruction most of the student as P. Hill are receiving. The filming opened the door to the willingness of teachers to have individual lessons taped for self improvement or district use."

"Have gained an appreciation of the quality of instruction that is taking place right within my own building. Along with the quality also a willingness to continue to grow and my need to find and offer ways to improve for my staff."

o The federal granting agency:

"I am encouraged to know the support you received for this project. Teaching is a very detailed process, and I appreciate the focus you were allowed in researching the uses of an interactive video program on how to improve as a classroom teacher. I'm happy to know research like this is going on."

"It's willing to allow people to develop an innovative idea and run with it."

"Accountability continues to be the 'buzz' word . I'm glad to know money is going to fund such project."

"I think it has been a good way to fund a worthwhile project. I hope it doesn't just fizzle out. It is an excellent beginning and I think if it is correlated with the live teaching it can prove to be a very important resource to college education students."

"I am impressed that money is provided for education--to improve it at its most significant part--<u>the teacher</u>!"

"I continue to be amazed at the red tape and expectations or accountability required to obtain money for research."

5. FUTURE INVOLVEMENT--Based on your experience in the project, how would you view the possibility of collaborating on other projects . . . under what conditions?

"I am intrigued with the challenge of attempting to define teaching. I believe it is an art, but I enjoy the insights of research in bringing it into clearer focus. I want to share my observations and convections if they will help others grow and stay vital in the profession."

"I think it's vital to form a collaborative position between the public schools and the teacher education schools. The public schools are not only the recipients of the products from the College of Education, they also contain 'the pros' that can teach the to-be teachers."

"I would be very open to collaborating an other projects. I feel I've gain as much from you as you've gained from me."

"It would depend on the project. This has not been a bad experience."

"Depending on the projects - their objectives - time frames - etc. - I would gladly volunteer my services again."

"Based on my positive experience with this project, I would feel honored and grateful to be asked to serve again. I enjoy feeling that I, as an educator, can make a contribution to the improvement of my chosen field."

"Future involvement on other projects would be dependent upon the district's willingness and commitment."

"We would be willing to cooperate in other projects if needed. Has been a growing experience and it is good to get together with other representatives from other schools."

6. UTILITY OF THE MATERIALS--what practical value do the teaching assessment modules, the use of interactive video, and the research based monographs have for the educational community . . . for preservice teachers . . . for practicing teachers?

"I hope you will consider allowing creative uses of the material. I hope there will be those who will experiment and see the possibilities the materials offer. The "moment analysis approach" can be a significant component of a coordinated effort to bring young teachers to consciousness about teaching. They need to see uninterrupted teaching, but they also need to be instructed in how to analyze teaching."

"I see them being used during the student's student teaching experience. I think 1/2 day a week of student teaching should be spent reading the monographs, viewing the modules, and interacting with the university advisor. New teachers especially, could relate to and learn from this approach."

"I see the best use of these materials in three areas: 1) 3rd year college level curriculum, after having been exposed to techniques not as a teaching tool; 2) on site with student teachers--not all, but as needed when concerns arise, and 3) as a part of staff development for practicing classroom teachers (Phase III project)."

"I think correlating it with the live teaching it will be very valuable tool. I see it useful in the college classroom, discussion groups, and practical applications in the classroom. I also see it valuable for schools to use in case of teachers who may need help in certain areas. They may take this tape and use it privately or in a small discussion group and strive to correct an area that needs work, rather than a written reprimand from the principal or an evaluator. Mask it in combination with a TV course such as Dr. Glasser effect, correlate with TESA."

"1) new teacher; 2) teachers assistance;3) PTA meetings for p's - ex kg tape - etc.; 4) grade level changes These modules should be used as part of the student teachers program between their 2 different sessions of student teaching. Let them get their 'feet wet', view and discuss these films and then do their last student teaching block. They'll have more meaning."

"I see the value of the teaching assessment modules as being extremely valuable not only for preservice teachers in checking into their own preconceived ideas as to how a person stands up in front of a class of students to teach them something but for teachers already in the field striving for excellence and perhaps searching for ways to improve. With Phase III money available for Staff Development and in service, a refresher course in teaching such as other professions offer, might help all of us do a better job with our students, improving our own image in the meantime."

"The modules and monographs could be used with new teachers, teachers working on assistance teams, staff development, student teachers, and parent groups. Jane's tape would be useful during the kindergarten parent's orientation."

"We need to explain and show what is available at Ed Fairs, Administrative Conference, etc. So systems are aware of process and then it would be used as a staff development process. I also feel the University is missing the boat if it is not incorporated into some classes either at the undergraduate or graduate level."

7. "What additional research activities in the area of the improvement of classroom teaching and teaching behaviors do you believe the university and the college of education should develop?

"I believe there is a need to help young people develop a philosophical conviction about teaching, how teaching can be a way of making meaning that will keep them vital for their entire career. It isn't enough to be competent in teaching there has to be some longer commitment before the classroom takes on the 'privileged glimpse' that it is."

"I have always felt that the student teacher needs more actual classroom experiences. Teaching is not a textbook. it is working with real children in real schools with real experiences. The more exposure they can have to the 'real world' of teaching, I feel, will make them a better teacher and help make the decision that they really want to be out there in the classroom. having the desire is the key above anything else. I think this research idea has lots of potential if it is perfected to the best of its ability. It will be a tremendous asset to the field of education. Get this one down pat first and make it usable."

"Education seems to be so trendy -- I'd like to see research done on 10 reading beyond the basal - pro's con's - 2) manipulative's in math - beneficial or not- 3) class sizes - 4) effectiveness of time student teachers spend in the classroom - 8 weeks, 12 weeks, 16 weeks - does this time frame effect teaching."

More of what is already taking place -- more classroom experience, especially early-on in the students college education as well as more examples of both positive and negative teacher behaviors in the classroom."

"A project designed to assist teachers in working with student teachers. Suggested ideas such as student-teacher conferencing tape of expected behaviors -- this would be more effective than the booklet they are given."

8. What methods should be used to facilitate the adoption and diffusion of the teaching assessment modules in the public schools . . . how and with whom should the initial contacts be made . . . how should the concept be presented to teachers . . . what is the role of teachers in the planning and conducting of inservice activities?

"interested teachers within the staff of a school should do the selling of these materials. It isn't enough to have Iowa State sell the material. Ownership has to begin at the grass roots level. Only then will the materials really be used. Staffs need to be aware of the materials and to see their creative uses. Teachers, more than administrators or ISU professors, have to believe in the materials before anything real will happen."

"Contacts should be made with Superintendents or Assistant Superintendents in Charge of Instruction. Modules could be used for teachers seeking help, teachers referred by principal, building in-service on a particular concept, cooperative teaching groups. Modules should be presented to teachers as 'Teachers Helping Other Teachers'. In our district, teachers have a great say in what inservice activities are planned for them and teachers usually lead the inservice.

"Schools need to be informed as to the availability of these materials. A video or written publication as to background and possible use of materials could be sent to curriculum directors to spark interest."

"As I mentioned before, I think using the modules to help not criticize teachers will be the key. No one wants to be torn apart. It is a touchy situation and must be handled with TLC. Inservice, small groups, grade level teachers may be a way to get them out to the schools."

"The initial contact should be made to the Director of Elementary and Secondary Education. then contacts should filter down to building principals. 9 districts in service where all teachers are present would be another excellent way to present the modules in public schools."

"I believe the committee should be kept intact long enough to spread the word in their school systems. Of course, the director of curriculum for Des Moines Public Schools should be contacted as well as director of staff development. More teachers should be encouraged to be involved; after all, as educators, we do (or should) care about the quality of training new teachers are receiving-- "no man is an island;" we reflect on each other by what happens from day one in the classroom."

"Tapes could be sent to the Director of Elementary Education and/or Staff Development for pursuing. Teachers need to know the content of the tapes being used and the purpose. Teachers are more enthusiastic if they plan and conduct the inservice using their personal tape."

"Curriculum Development and Staff Development needs warrants consideration of the TAM project. If it helped only one individual per district we have reached nearly 500 individuals. Those that gained only one idea would be insurmountable. It needs to be promoted. (Phase III monies)."